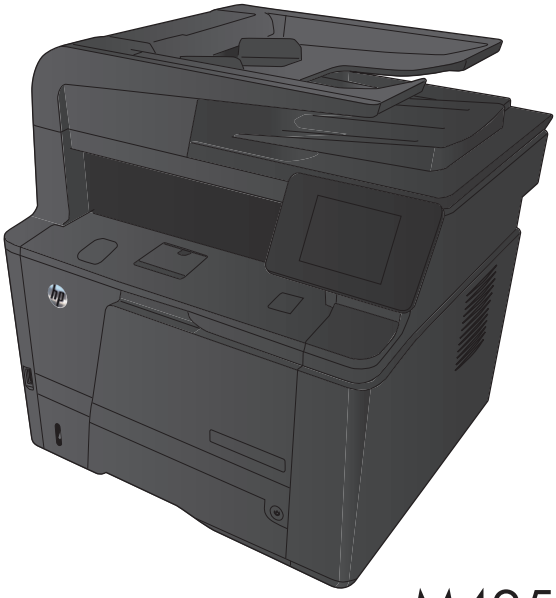
LASERJET PRO 400 MFP

Troubleshooting Manual



M425

HP LaserJet Pro 400 MFP M425 Series

Troubleshooting Manual

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Conventions used in this guide

TIP: Tips provide helpful hints or shortcuts.

NOTE: Notes provide important information to explain a concept or to complete a task.

CAUTION: Cautions indicate procedures that you should follow to avoid losing data or damaging the product.

WARNING! Warnings alert you to specific procedures that you should follow to avoid personal injury, catastrophic loss of data, or extensive damage to the product.

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1 Theory of operation

- Basic operation
- Engine control system
- Laser scanner system
- Image-formation system
- Pickup and feed system
- Paper feeder (optional Tray 3)
- Scanner system
- Fax functions and operation
- USB flash drive

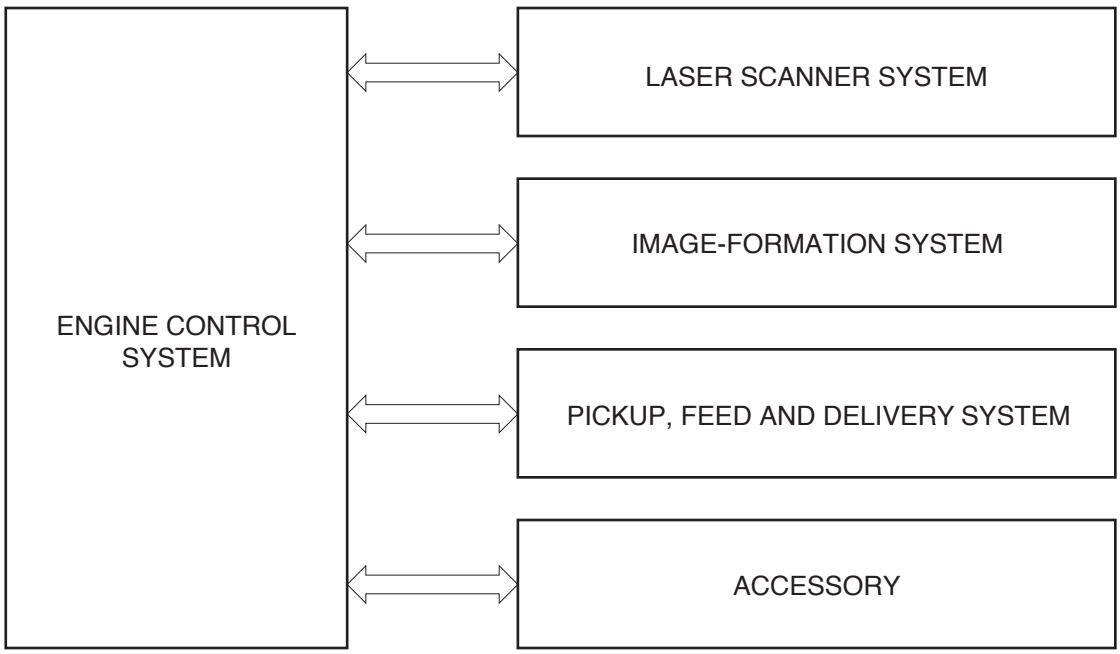
Basic operation

Major product systems

The product includes the following systems:

- Engine control system
- Laser scanner system
- Image-formation system
- Pickup and feed system
- Accessory

Figure 1-1 Product systems



Product components

Figure 1-2 Product components

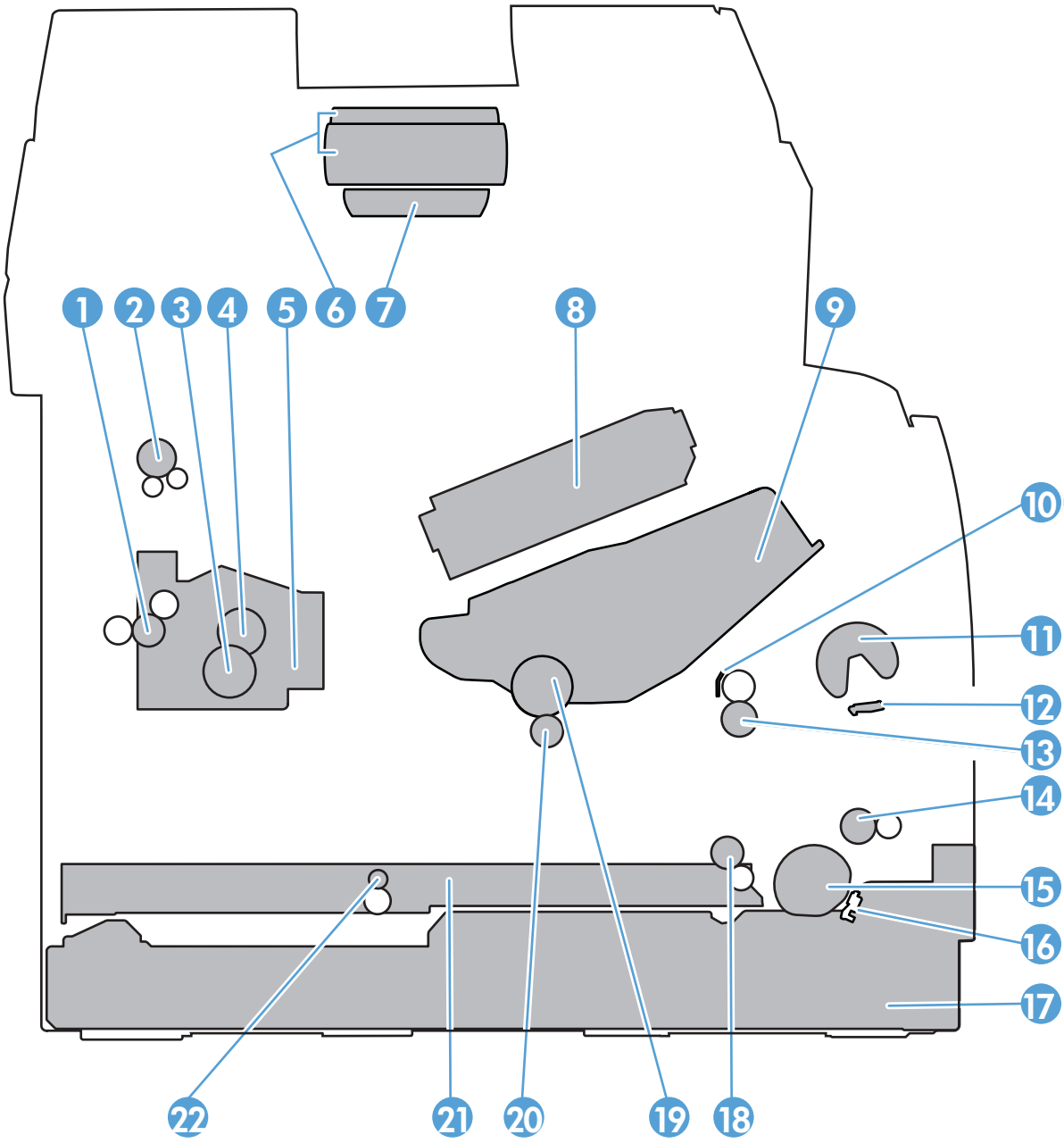


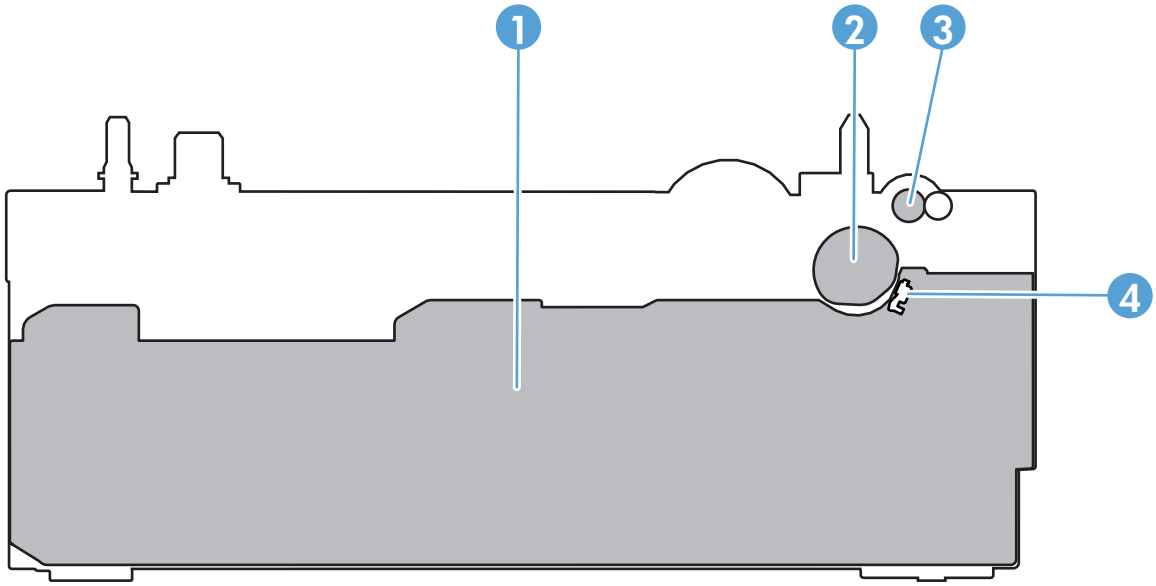
Table 1-1 Product components

Item	Description	Item	Description
1	Fuser delivery roller	12	Multipurpose tray (Tray 1) separation pad
2	Face-down delivery roller	13	Registration roller
3	Pressure roller	14	Feed roller
4	Fuser film assembly	15	Tray 2 cassette pickup roller

Table 1-1 Product components (continued)

Item	Description	Item	Description
5	Fuser	16	Tray 2 cassette separation pad
6	Document feeder pickup rollers	17	Tray 2 cassette
7	Document feeder separation pad	18	Duplex re-pickup roller
8	Laser scanner	19	Photosensitive drum
9	Toner cartridge	20	Transfer roller
10	Registration shutter	21	Duplex feed assembly
11	Multipurpose tray (Tray 1) pickup roller	22	Duplex feed roller

Figure 1-3 Optional Tray 3 components



Item	Description	Item	Description
1	Tray 3 cassette	3	Tray 3 feed roller
2	Tray 3 pickup roller	4	Tray 3 separation pad

Sequence of operation

The product operational sequence is controlled by the DC controller that is on the engine control system. The following table describes each period of a print operation from when the product is turned on until the motor stops rotating.

Table 1-2 Sequence of operation

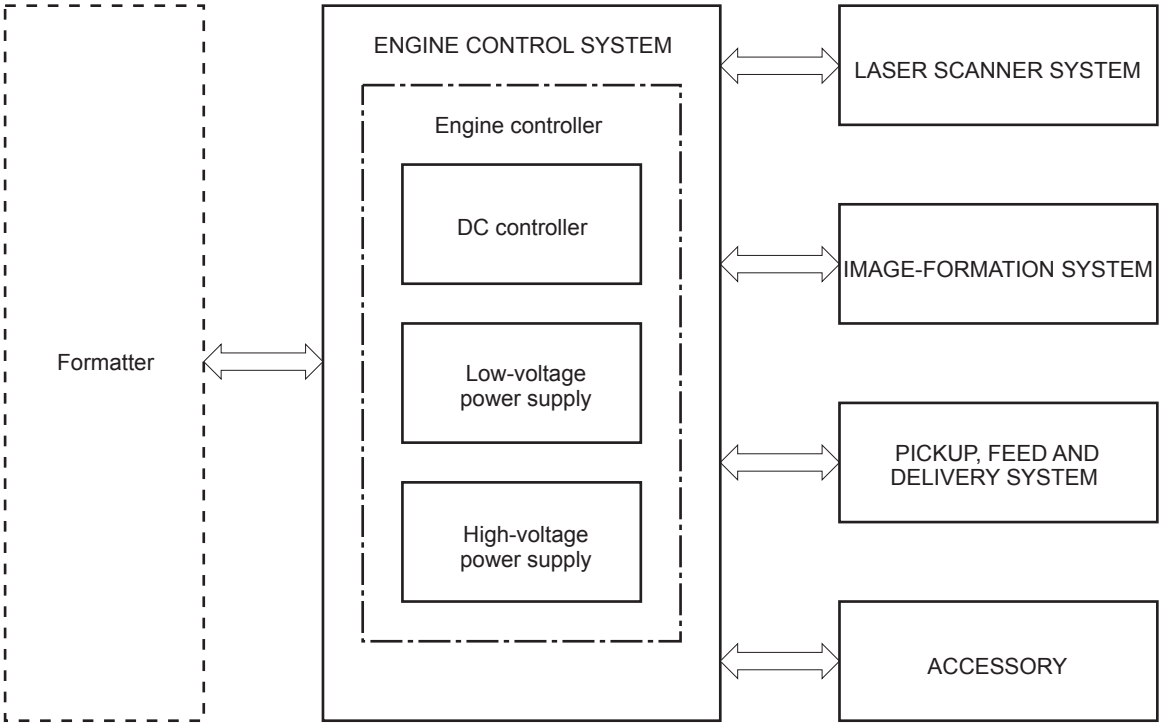
Period	Duration	Purpose	Remarks
WAIT	From the time the power is turned on or the door is closed until the drum-phase adjustment is complete	Brings the product to the ready state	The product detects the toner level, cartridge presence, and environment.
STBY (Standby period)	From end of the WAIT or LSTR period until either the print command is received from the formatter or the power is turned off	Maintains the product in readiness for a print command	The product enters sleep mode when the formatter sends a sleep command.
INTR (Initial rotation)	From the time the print command is received until the fuser temperature reaches its target temperature	Prepares the high-voltage biases, laser scanner, and fuser for printing	
PRINT	From the end of INTR period until the fuser paper sensor detects the trailing edge of paper	Forms the images on the photosensitive drum and transfers the toner image to the print media	
LSTR (Last rotation)	From the end of the PRINT period until the delivery motor stops rotating	Moves the printed sheet out of the product, and stops the output from the laser scanner and high-voltage biases	The product enters the INTR period as soon as the formatter sends another print command.

Engine control system

The engine control system coordinates all product functions and drives the other three systems.

The engine control system contains the DC controller, high-voltage power supply PCA, and low-voltage power supply.

Figure 1-4 Engine control system components



DC controller

The DC controller controls the product operational sequence.

Figure 1-5 DC controller

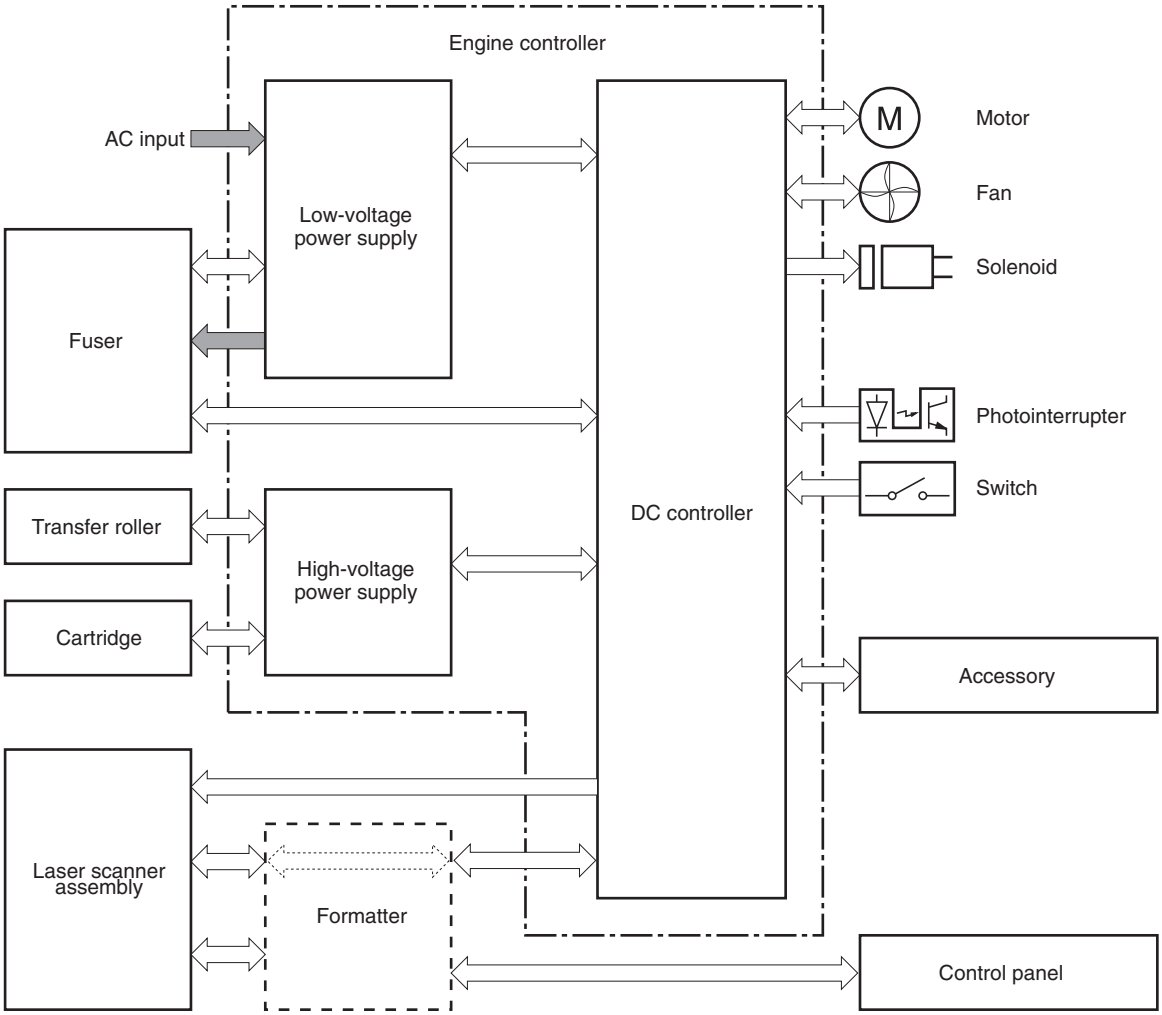


Table 1-3 DC controller electrical components

Component type	Symbol	Description
Fan	FM1	Main fan
Motor	M1	Main motor
	M2	Scanner motor
Solenoid	SL1	Multipurpose tray pickup solenoid
	SL2	Cassette pickup solenoid
	SL3	Duplex reverse solenoid

Table 1-3 DC controller electrical components (continued)

Component type	Symbol	Description
Switch	SW1001	Power switch
	SW301	Door-open detection switch
Photointerrupter	PS912	Top sensor
	PS913	Paper width sensor
	PS914	Cassette media out sensor
	PS914	Left paper width sensor
	PS915	Multipurpose tray media out sensor
	PS915	Right paper width sensor
	PS916	Fuser output sensor
	PS916	Output-bin paper-full sensor

Motor control

The product has one motor for media feed and image formation.

Figure 1-6 Main motor

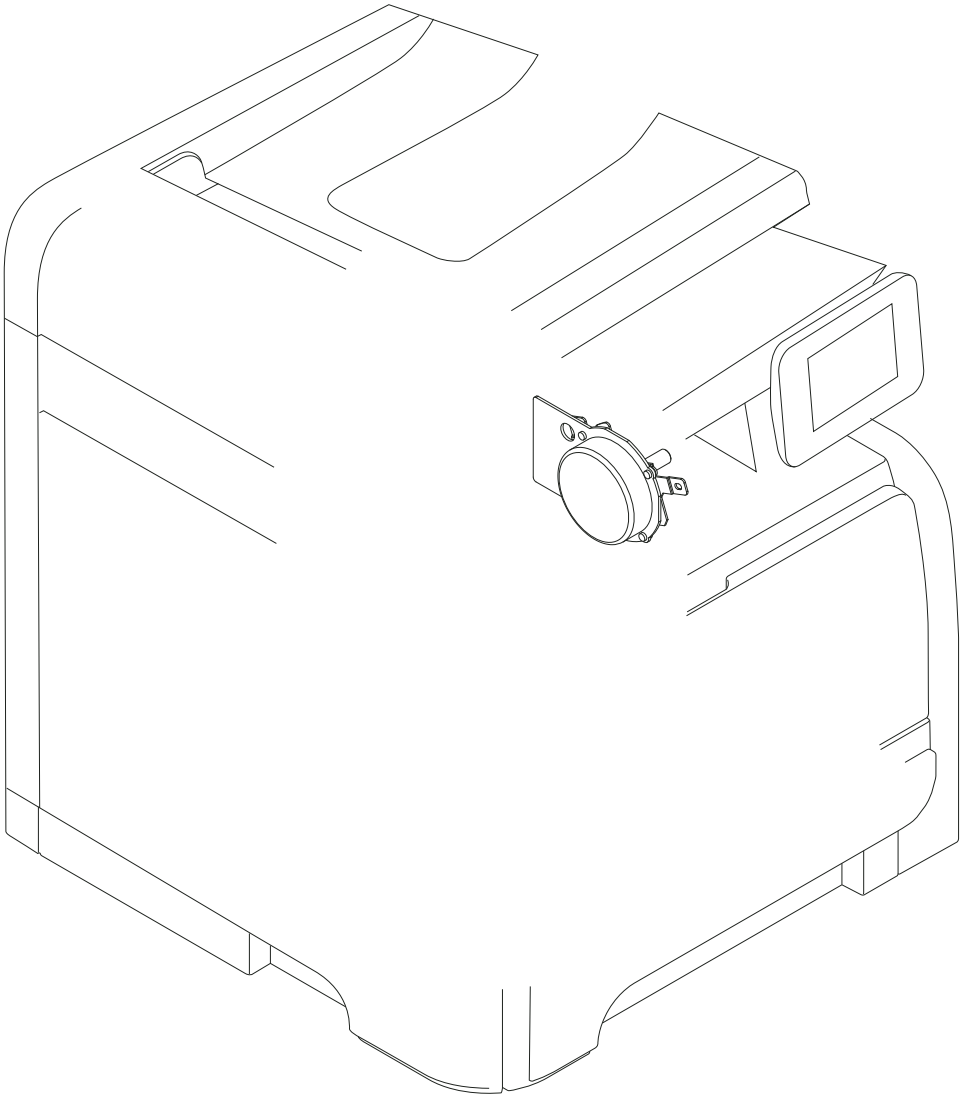


Table 1-4 Motor control components

Symbol	Name	Driving part	Failure detection
M1	Main motor	Rollers in the product an rollers in the paper feeder	Yes

Fan control

The product has one fan for preventing the product from overheating.

Figure 1-7 Fan control

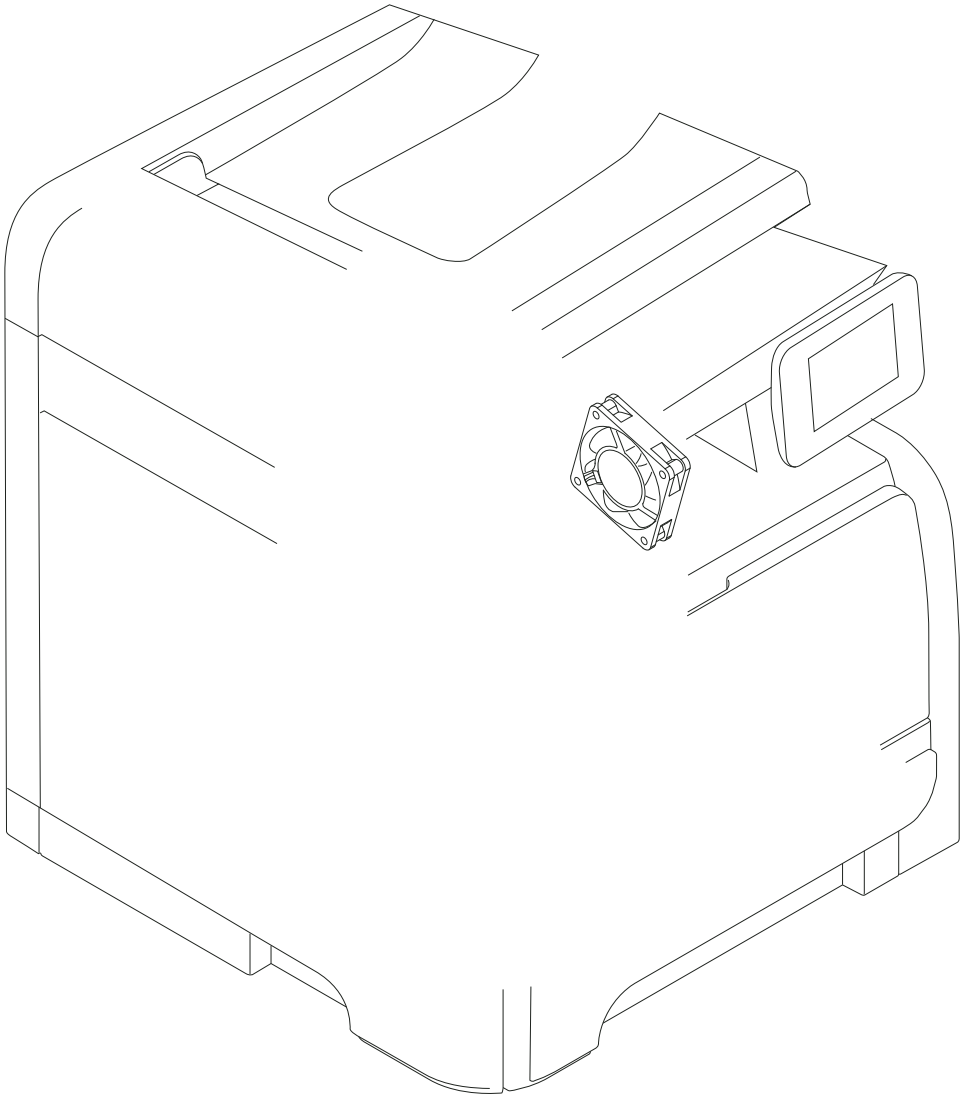


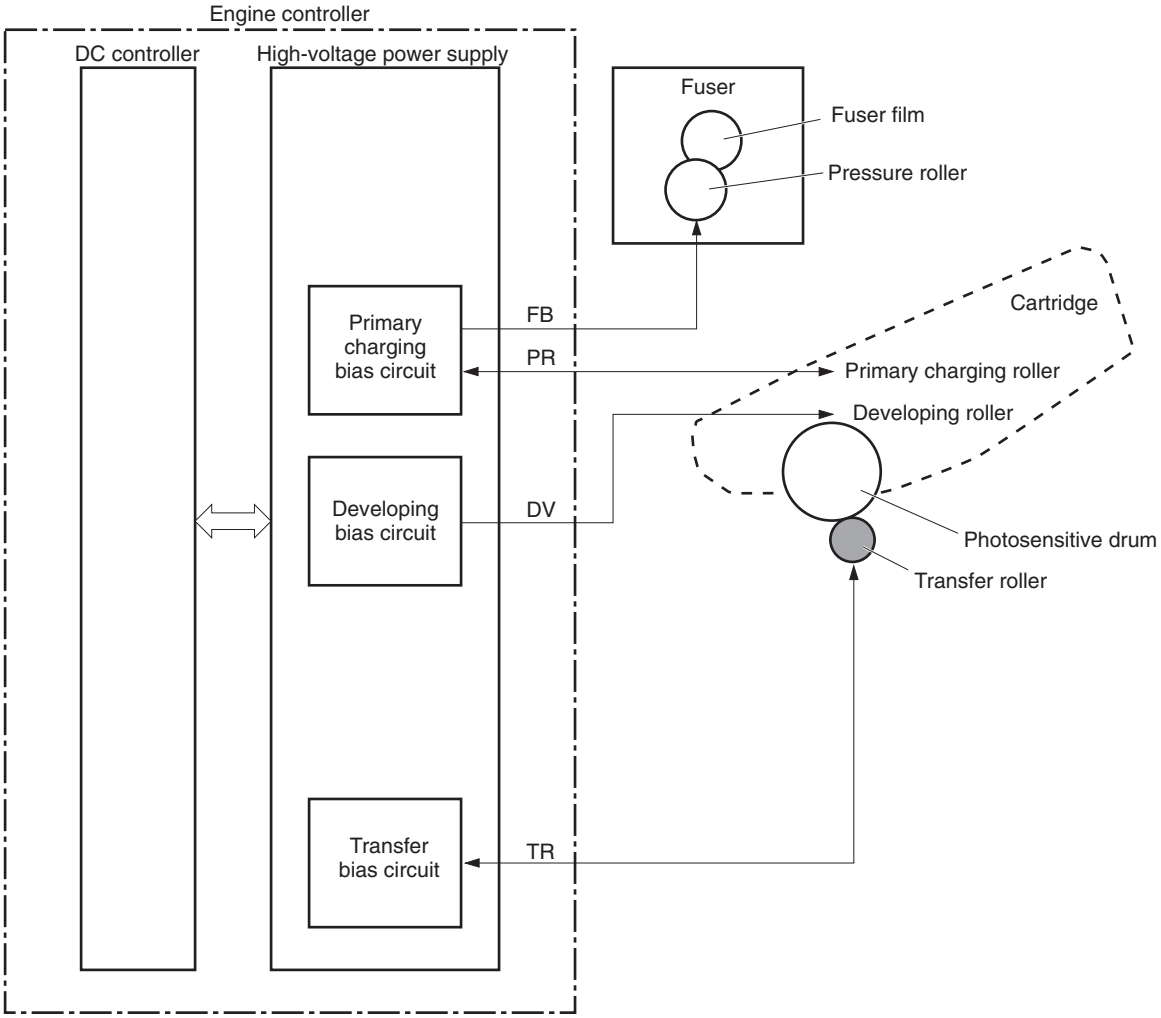
Table 1-5 Fan control components

Symbol	Name	Cooling area	Type	Speed
FM1	Fan	Inside the product	Intake	Full

High-voltage power supply

The DC controller controls the high-voltage power supply to generate high-voltage biases. The high-voltage power supply generates the high-voltage biases that are applied to the primary charging roller, developing roller, transfer roller, and fuser film.

Figure 1-8 High-voltage power supply



Fuser control circuit

The fuser control circuit controls the fuser temperature. The product uses an on-demand fusing method.

Figure 1-9 Fuser control circuit

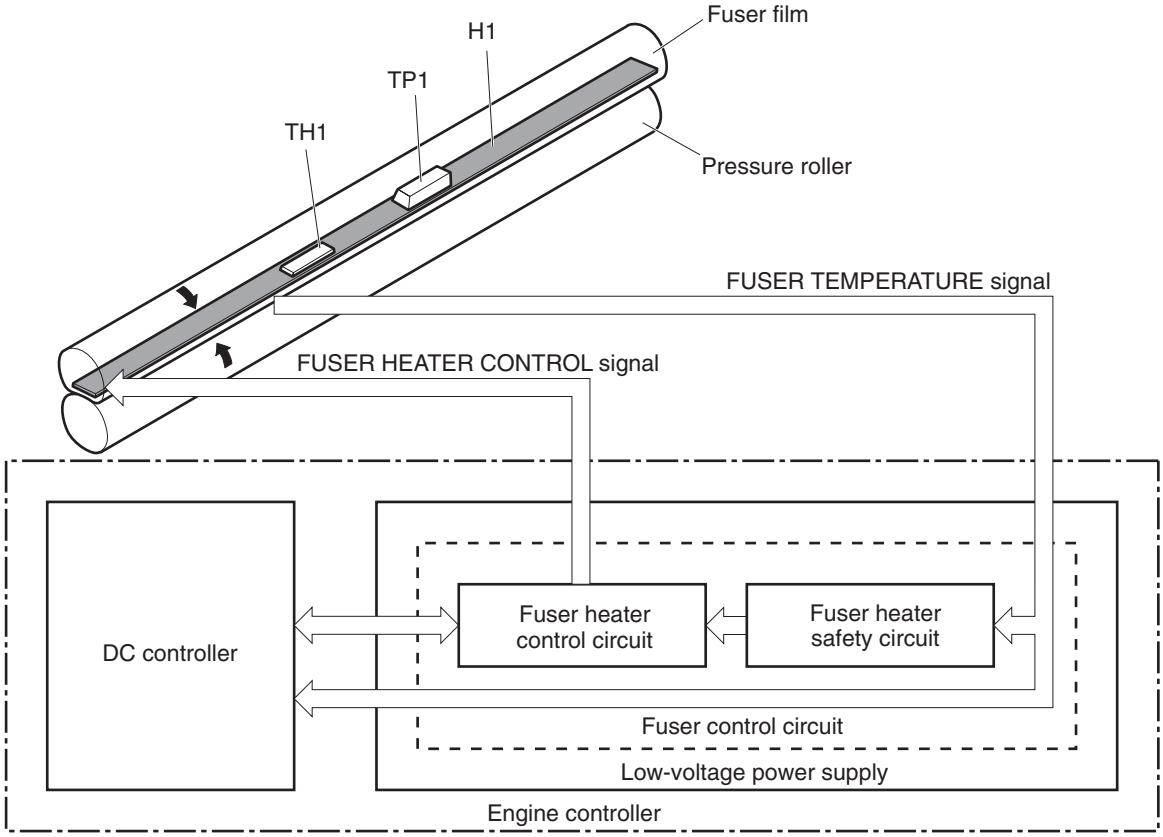


Table 1-6 Fuser control circuit components

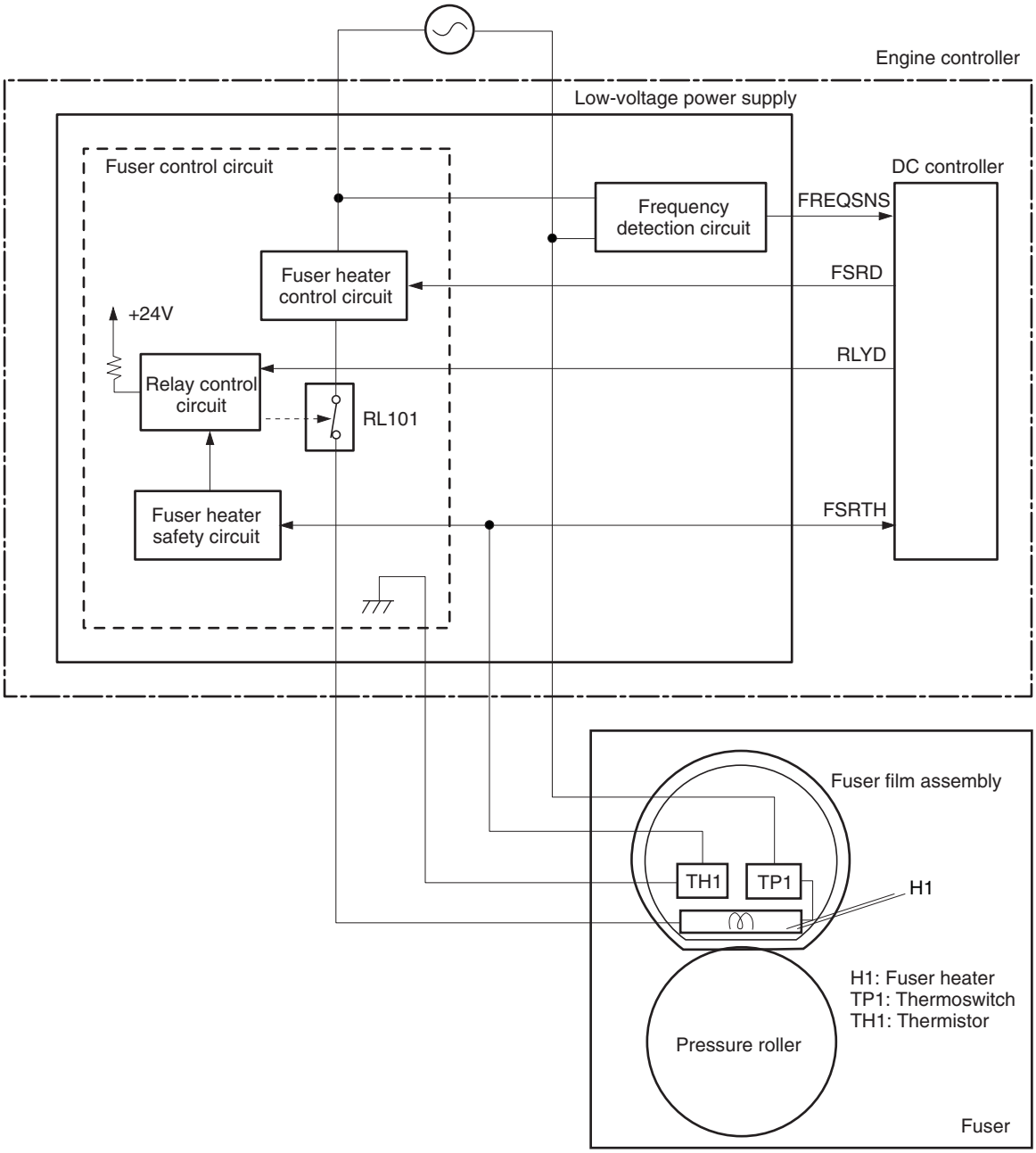
Symbol	Name	Description
H1	Fuser heater	Heats the fuser film
TH1	Thermistor	Detects fuser temperature (contact type)
TP1	Thermoswitch	Prevents an abnormal temperature rise of the fuser heater (contact type)

These temperature controls in the fuser are performed by the fuser heater control circuit and the fuser heater safety. They are controlled by the DC controller.

Fuser temperature control

The fuser temperature control maintains the fuser heater at its targeted temperature.

Figure 1-10 Fuser temperature control



The DC controller monitors the fuser temperature (FSRTH) signal and sends the fuser heater control (FSRD) signal according to the detected temperature. The fuser heater control circuit controls the fuser heater depending on the signal so that the heater remains at the target temperature.

Fuser protection function

When the protective function detects an abnormal temperature rise in the fuser, it interrupts the power supply to the fuser heater. The following components prevent an abnormal temperature rise of the fuser heater:

- **DC controller**: The DC controller monitors the detected temperature of the thermistor. The DC controller makes the fuser heater control signal inactive and releases the relay to interrupt power supply to the fuser heater when it detects that the thermistor temperature is 240° C (464° F) or higher.
- **Fuser heater safety circuit**: The fuser heater safety circuit monitors the detected temperature of the thermistor. The fuser heater safety circuit releases the relay control circuit to interrupt power supply to the fuser heater when it detects that the thermistor temperature is 265° C (509° F) or higher.
- **Thermoswitch**: The contact of the thermoswitch is broken to interrupt power supply to the fuser heater when it detects that the temperature fuse is 230° C (446° F) or higher

Fuser failure detection

The DC controller determines a fuser failure, makes the fuser heater control signal inactive, releases the relay to interrupt power supply to the fuser heater, and notifies the formatter of a failure state when it encounters the following conditions.

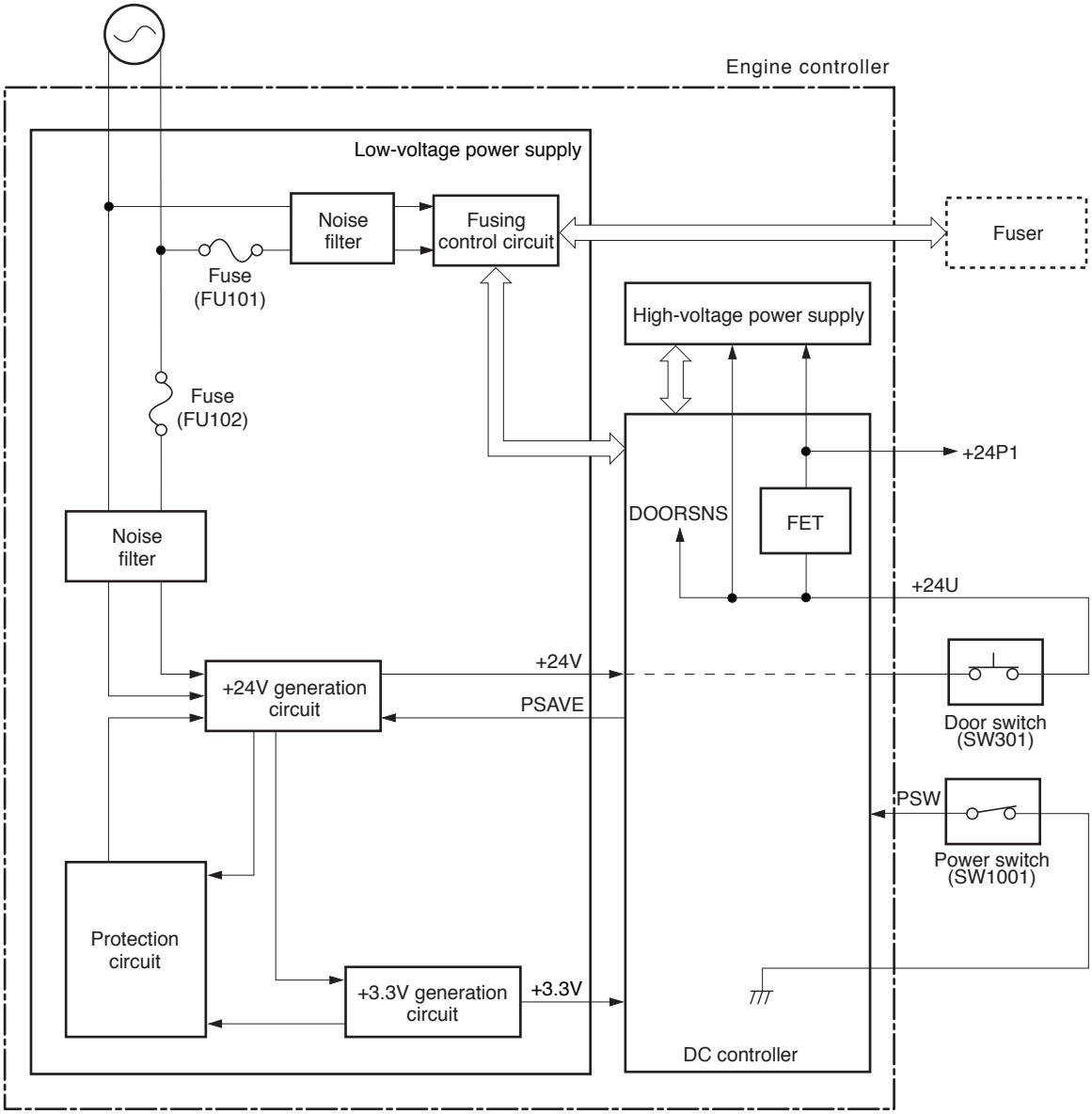
- **Start-up failure**
  - If the detected temperature of the thermistor is kept at a specified temperature or higher for a specified period of heater start-up during the wait period.
  - If the detected temperature of the thermistor is kept at a specified temperature or lower for a specified period under the heater temperature control during the initial rotation period.
  - If the detected temperature of the thermistor is kept at a specified temperature or lower for a specified period under the heater temperature control during the print period.
  - If the detected temperature of the thermistor does not reach its targeted temperature within a specified period under the heater temperature control during the initial rotation period.
- **Abnormal low temperature**
  - If the detected temperature of the thermistor is kept at a specified temperature or lower for a specified period under the heater temperature control.

- **Abnormal high temperature**
  - If the detected temperature of the main thermistor is kept at a specified temperature or higher for a specified period.
- **Drive circuit failure**
  - If a specified frequency of the frequency signal is not detected within a specified period after the product is turned on.
  - If an out of specified frequency of the frequency signal is detected after the product is turned on.

Low-voltage power supply

The low-voltage power supply converts AC power from the power receptacle into DC power to cover the DC loads.

Figure 1-11 Low-voltage power supply



Protective function

The low-voltage power supply has a protective function against overcurrent and overvoltage conditions to prevent failures in the power supply circuit. If an overcurrent or overvoltage event occurs, the system automatically cuts off the output voltage.

If the DC power is not being supplied from the low-voltage power supply, the protective function might have activated. In this case, turn off the power switch, and then unplug the power cord. Do not plug in the power cord or turn the power switch on again until the root cause is found.

In addition, two fuses in the low-voltage power supply protect against an overcurrent event. If an overcurrent event occurs in the AC line, the fuse blows and cuts off the power distribution.

Safety

For safety purposes, the product has a function to interrupt the 24V power supply to the fuser and the high-voltage power supply. The door switch is turned off and 24V power stops if the cartridge door is opened (SW301 is turned off).

The product has the power switch on the DC line, so if the AC power flows, even the power switch is turned off. Be sure to unplug the power cord before disassembling the product.

Low-voltage power supply unit failure detection

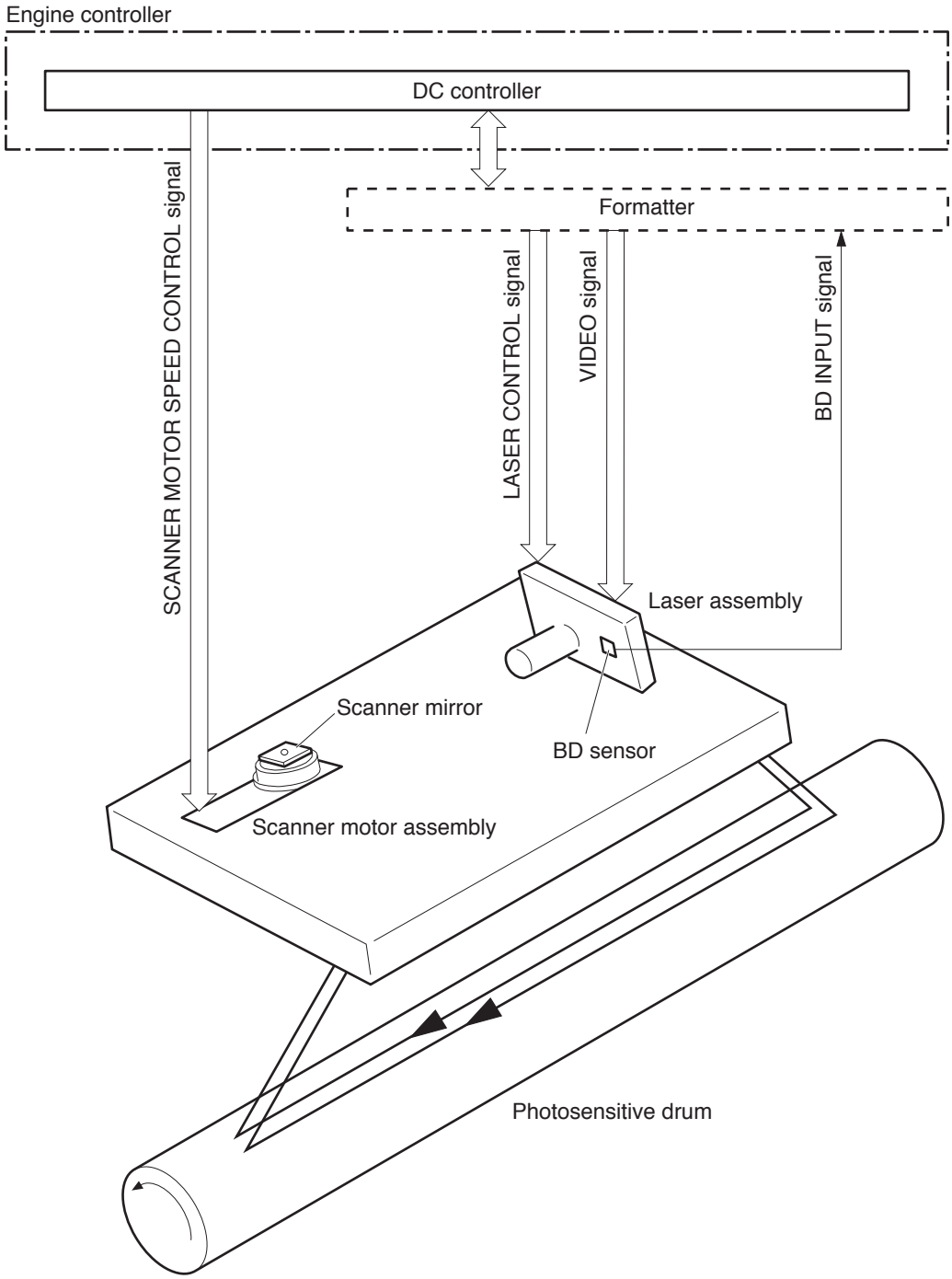
The DC controller determines a low-voltage power supply failure, stops 24V output and notifies the formatter when it detects that the 24V output is higher than the specified voltage.

Laser scanner system

The laser scanner system forms a latent image on the photosensitive drum according to the video signals sent from the formatter.

The main components of the laser scanner are the laser assembly and the scanner motor assembly, which are controlled by the signals sent from the DC controller.

Figure 1-12 Laser scanner system



Laser failure detection

The optical unit failure detection sensor manages the laser scanner unit failure-detection functions. The DC controller identifies the laser scanner unit failure and notifies the formatter if the laser scanner unit encounters the following conditions:

- Scanner motor failure
- BD failure

Image-formation system

The image-formation system forms a toner image on the paper. The image-formation system includes the following components:

- Toner cartridge
- Transfer roller
- Fuser
- Laser scanner

The DC controller controls the laser scanner and high-voltage power supply to form the toner image on the photosensitive drum. The image is transferred to the paper and fused.

Figure 1-13 Image-formation system

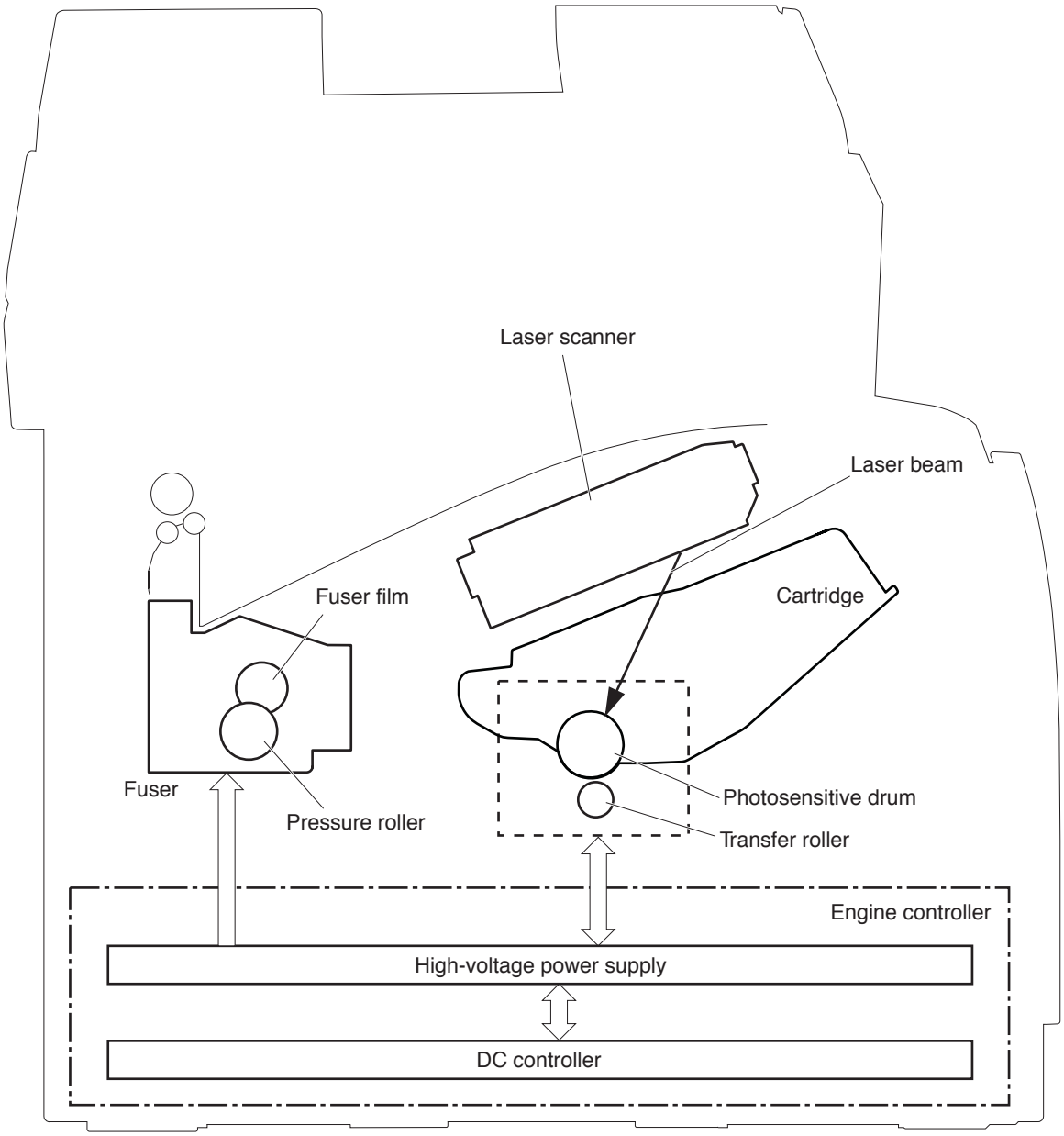


Image-formation process

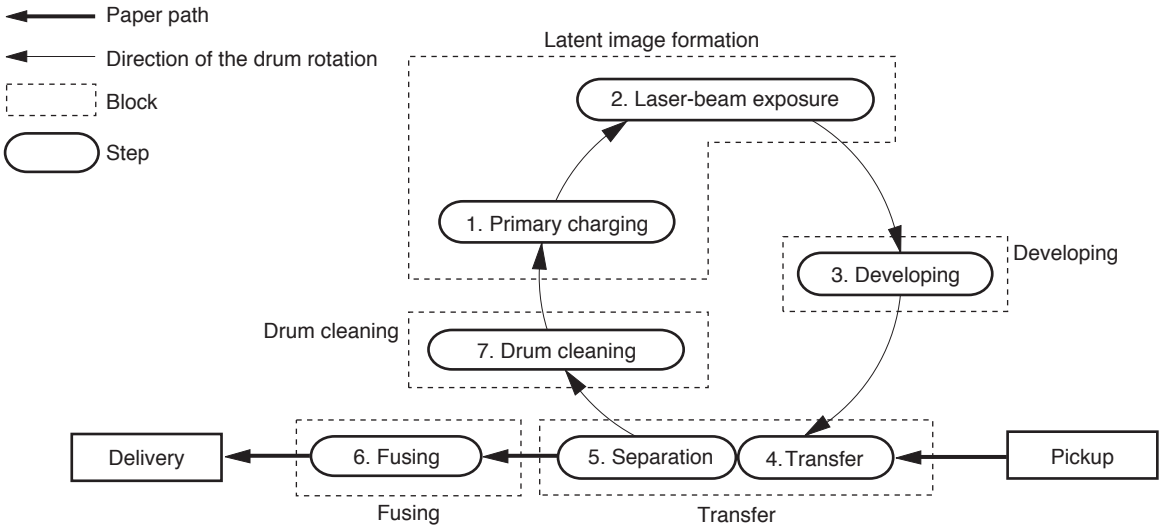
Laser printing requires the interaction of several different technologies including electronics, optics, and electrographics to provide a printed page. Each process functions independently and must be coordinated with the other processes. Image formation consists of the following processes:

- Latent-image formation
- Development

- Transfer
- Fuser
- Drum cleaning

These processes are divided into seven steps, which are shown below and described in the following sections.

Figure 1-14 Image-formation process



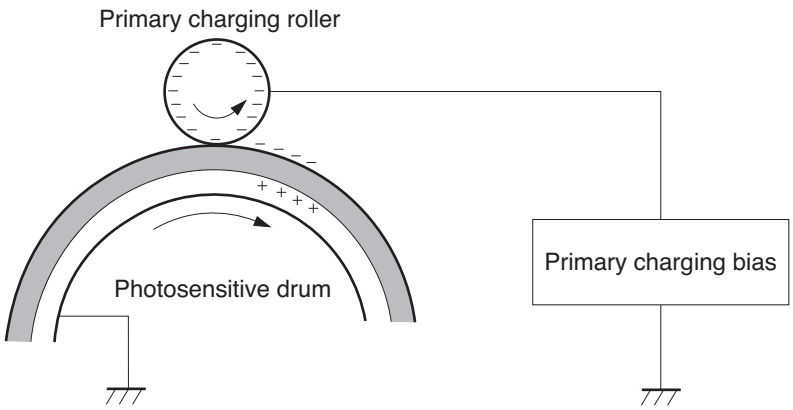
Latent-image formation stage

During the steps that comprise this stage, a latent image is formed by applying a negative charge to the photosensitive drum. You cannot see this image on the drum.

Step 1: Primary charging

To prepare for latent image formation, the surface of the photosensitive drum is charged with a uniform negative charge. The primary charging roller receives the primary charging bias, and then the roller charges the drum directly.

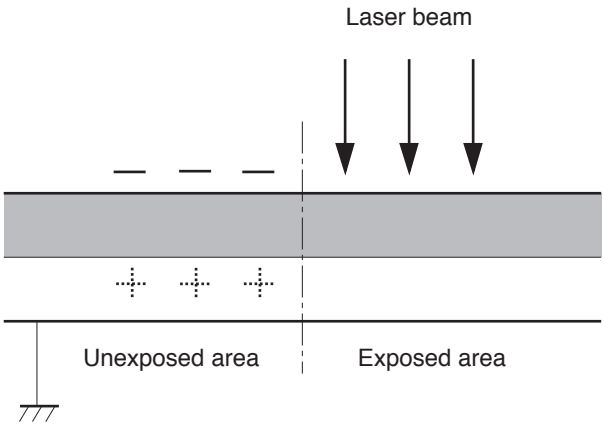
Figure 1-15 Primary charging process



Step 2: Laser-beam exposure

The laser beam scans the photosensitive drum to neutralize the negative charge on portions of the drum surface. An electrostatic latent image forms where the negative charge was neutralized.

Figure 1-16 Laser-beam exposure



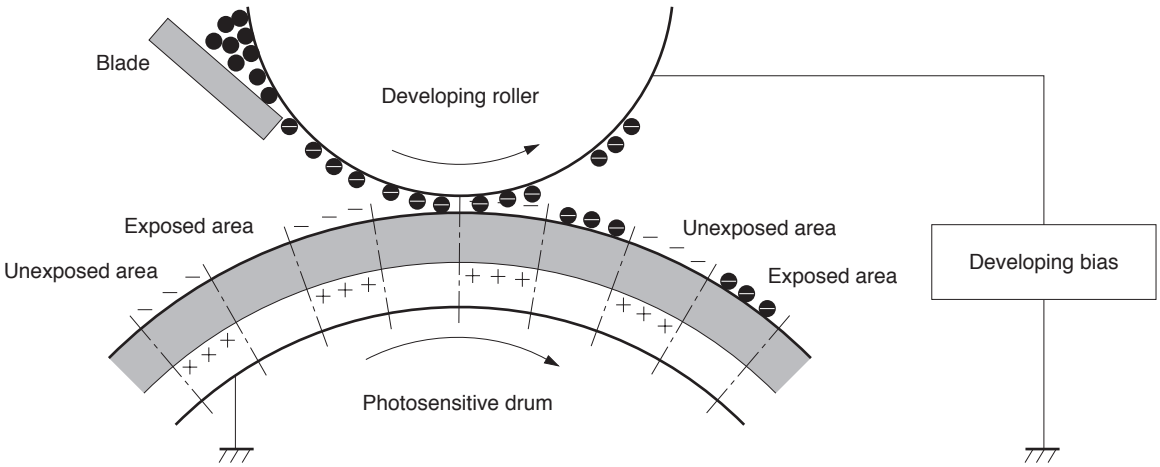
Developing stage

The developing roller contacts the photosensitive drum and deposits toner on the electrostatic latent image, which becomes visible.

Step 3: Development

Toner acquires a negative charge as a result of the friction from the developing roller rotating against the developing blade. When the negatively charged toner comes in contact with the drum, it adheres to the electrostatic latent image. When the toner is on the drum, the image becomes visible. The developing bias is applied to the developing roller.

Figure 1-17 Development process



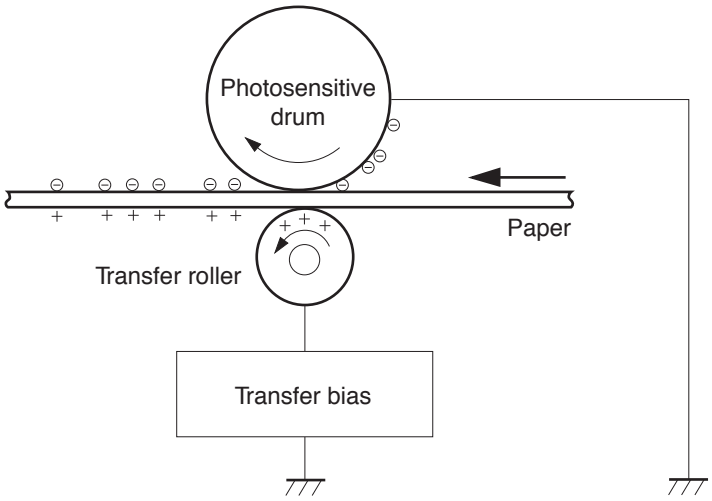
Transfer stage

During the transfer stage, the photosensitive drum transfers a toner image to the paper.

Step 4: Transfer

The transfer bias is applied to the transfer roller to give the paper a positive charge. The positively charged paper attracts the negatively charged toner from the photosensitive drum surface.

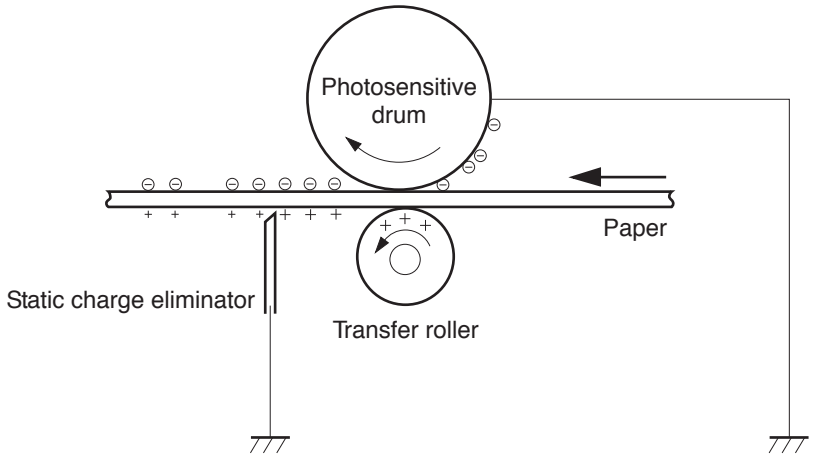
Figure 1-18 Transfer process



Step 5: Separation

The elasticity of the paper and the curvature of the photosensitive drum cause the paper to separate from the drum surface. The static charge eliminator reduces back side static discharge of the paper for stable paper feeding and image quality.

Figure 1-19 Separation from the drum



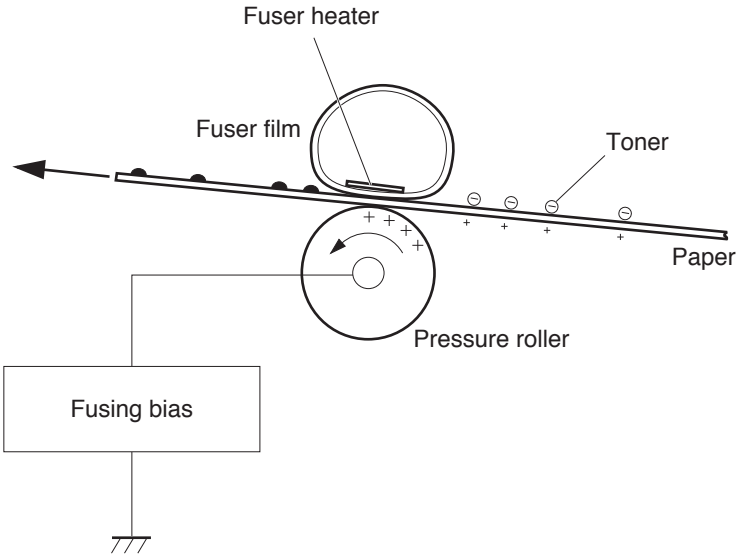
Fusing stage

Until the fusing stage is complete, the image is not permanently affixed to the print media. The toner can be easily smudged until the heat and pressure of the fusing process fix the image to the sheet.

Step 6: Fusing

The product uses an on-demand fusing method to fuse the toner image onto the media. The toner image is permanently affixed to the print media by the heat and pressure. The fusing bias is applied to the pressure roller to improve image quality.

Figure 1-20 Fusing



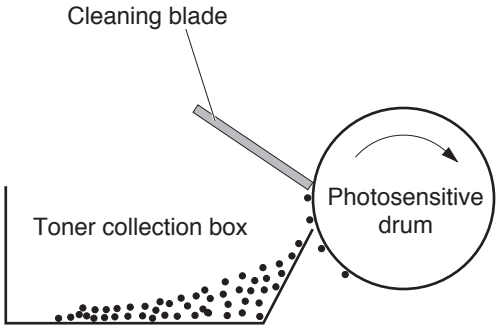
Drum cleaning stage

Not all of the toner is removed from the photosensitive drum during the transfer stage. During the cleaning stage, the residual, or waste, toner is cleared from the drum surface to prepare the surface for the next latent-image formation.

Step 7: Drum cleaning

The cleaning blade scrapes the residual toner off the surface of the photosensitive drum and deposits it in the toner collection box. The drum is now clear and ready for the next image-formation process.

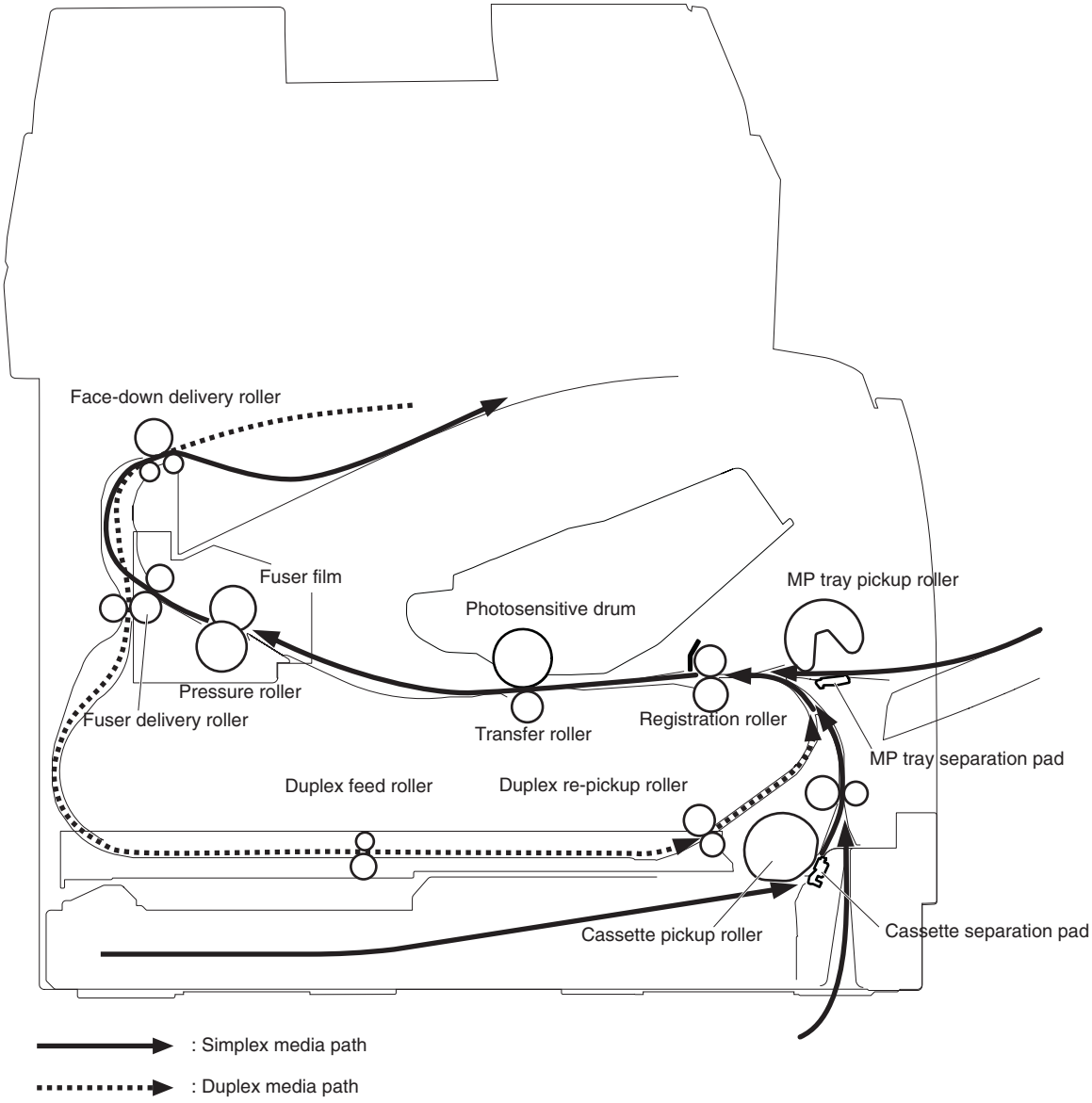
Figure 1-21 Drum cleaning



Pickup and feed system

The system picks up and feeds the print media. It consists of several types of feed rollers. The duplex feed assembly reverses and re-sends the paper to print on second side of paper.

Figure 1-22 Pickup and feed system paper path



The pickup and feed system includes the following electrical components.

Figure 1-23 Pickup and feed system electrical components

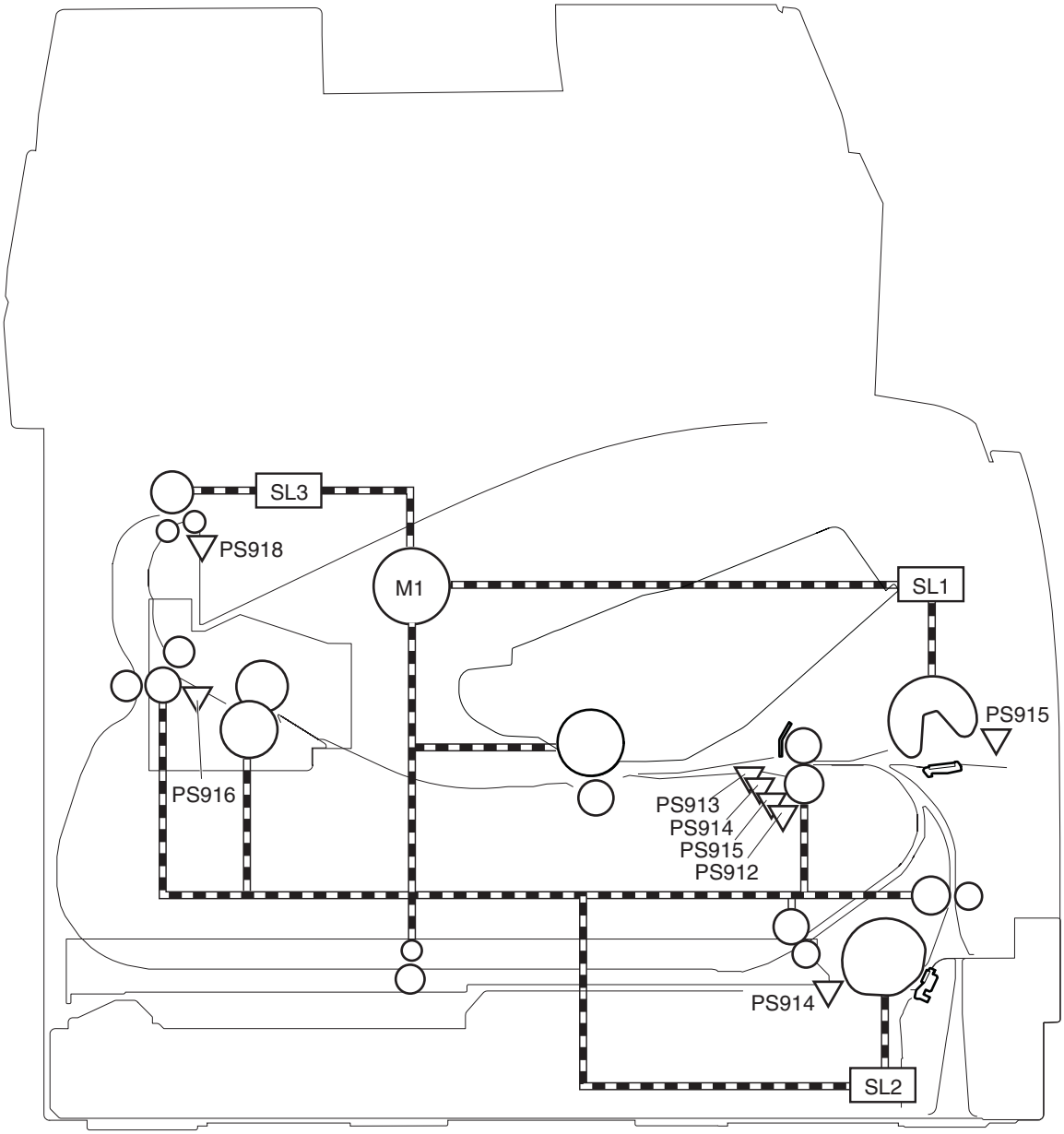


Table 1-7 Pickup and feed system electrical components

Number	Description	Signal
M1	Main motor	Main motor control signal
SL1	Cassette pickup solenoid	Cassette pickup solenoid control signal
SL2	Multipurpose tray pickup solenoid	MP tray pickup solenoid control signal
SL3	Duplex reverse solenoid	Duplex reverse solenoid control signal
PS912	Top-of-page sensor	Top signal
PS913	Paper width sensor	Media width signal
PS914	Cassette paper out sensor	Cassette media out signal

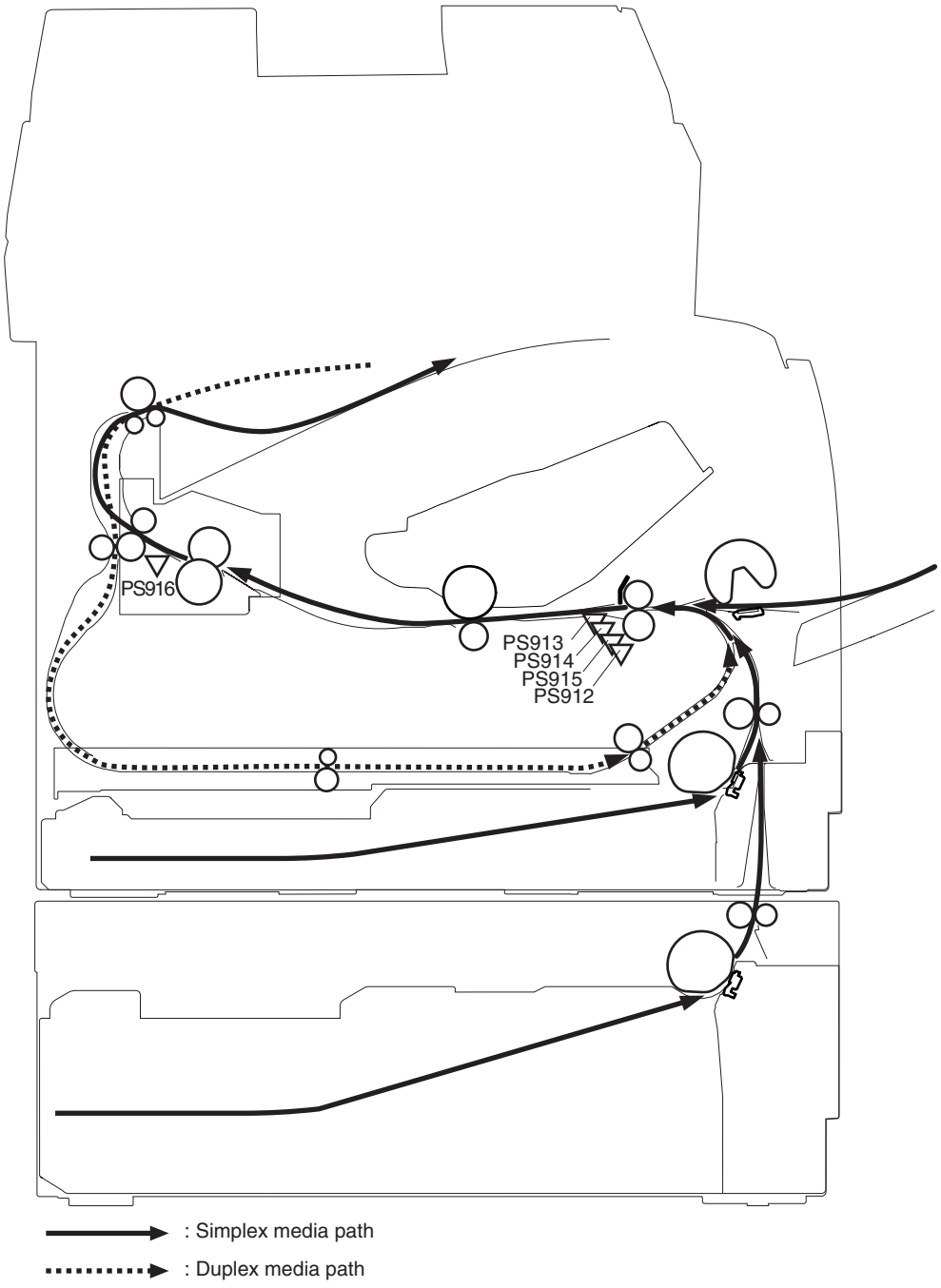
Table 1-7 Pickup and feed system electrical components (continued)

Number	Description	Signal
PS914	Left paper width sensor	Media width signal
PS915	Multipurpose tray media out sensor	MP tray media out signal
PS915	Right paper width sensor	Media width signal
PS916	Fuser output sensor	Fuser output signal
PS918	Output-bin full sensor	Output-bin media-full signal
	Document Loaded Sensor	Paper present signal
	Top of Form Sensor	Top-of-page signal

Jam detection

The product uses the following sensors to detect the presence of paper and to check whether the paper is being fed correctly or has jammed.

Figure 1-24 Jam detection sensors



Number	Description
PS912	Top-of-page sensor
PS913	Paper-width sensor

Number	Description
PS914	Left paper-width sensor
PS915	Right paper-width sensor
PS916	Fuser output sensor
	Document loaded sensor
	Top of Form Sensorr

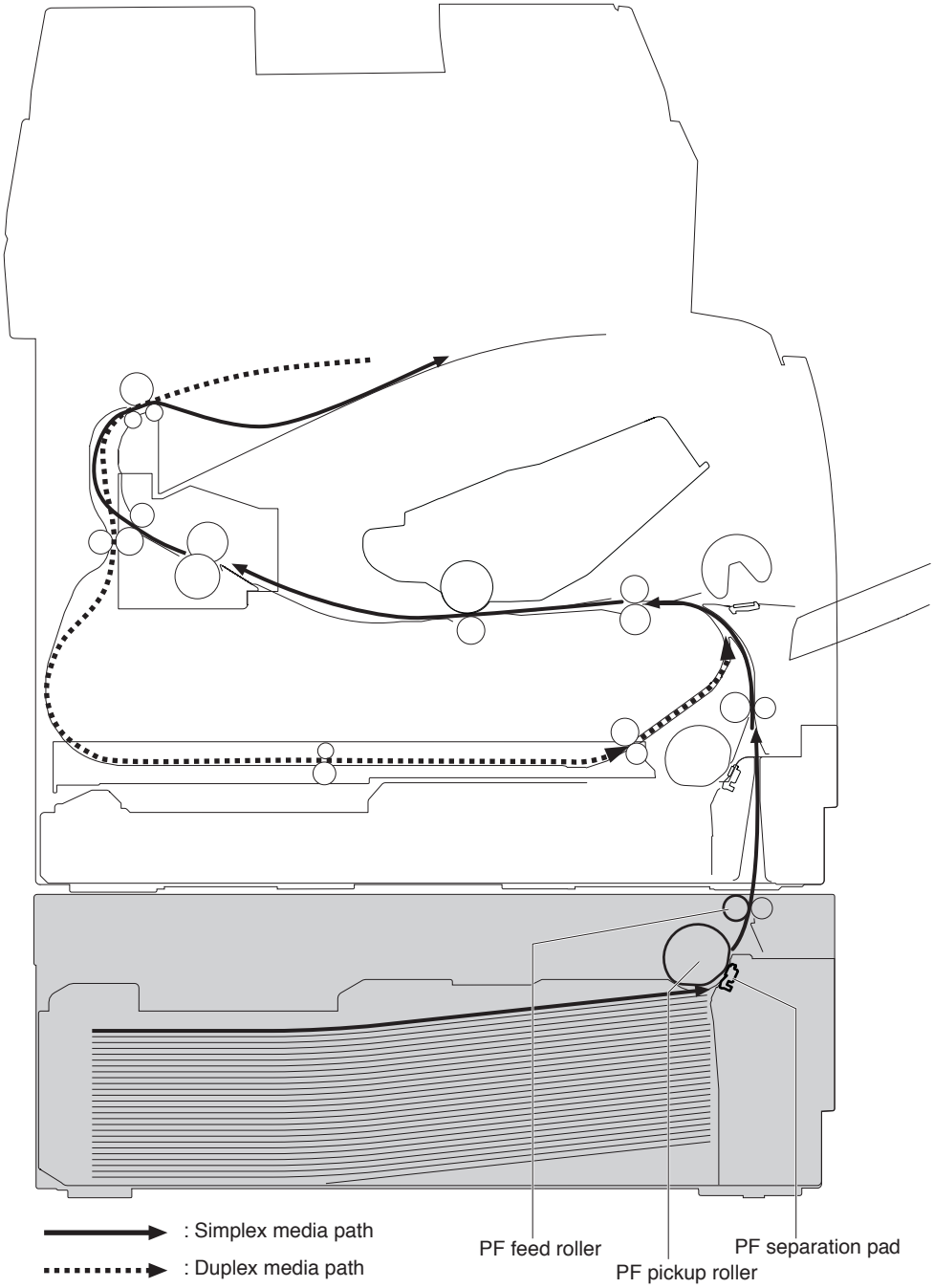
The product detects the following jams:

- Pickup delay jam
- Pickup stationary jam
- Delivery delay jam
- Delivery stationary jam
- Fuser wrapping jam
- Door open jam
- Residual paper jam
- Duplex reverse jam 1
- Duplex reverse jam 2
- Document feeder mispick
- Document feeder long document jam
- Document feeder stall jam

Paper feeder (optional Tray 3)

The paper feeder is optionally installed at bottom of the product. It picks up and feeds the paper to the product. The product DC controller controls the paper feeder operational sequence.

Figure 1-25 Paper-feeder paper path



The next figure shows the paper feeder controller signal flow.

Figure 1-26 Paper feeder signal flow

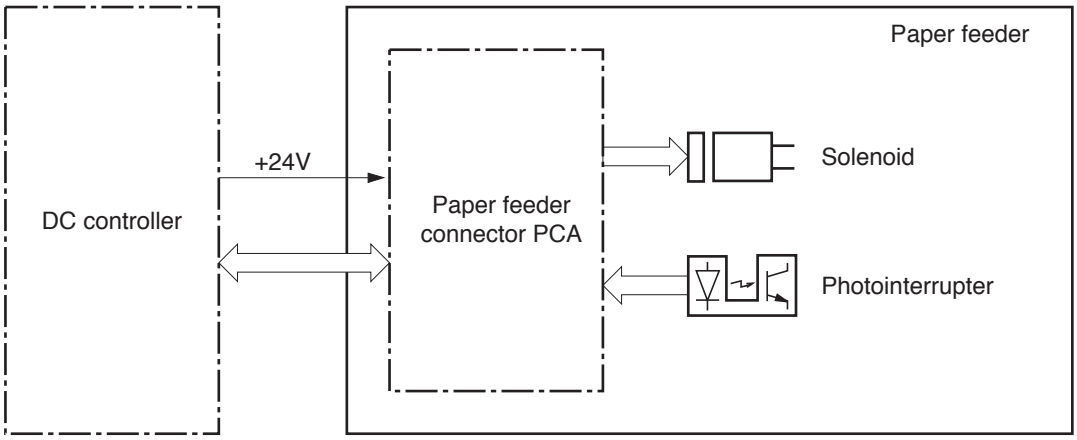


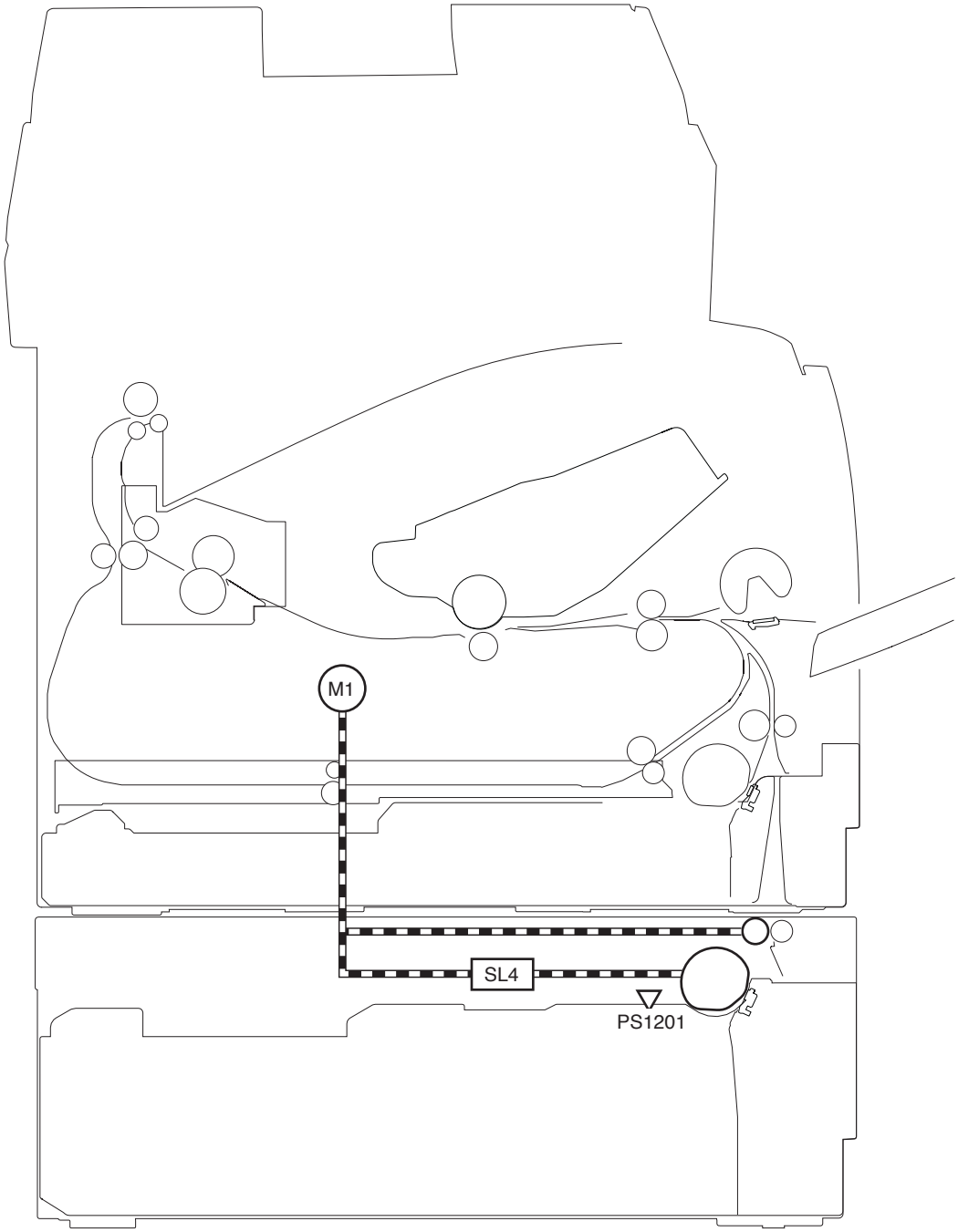
Table 1-8 Paper feeder components

Name	Symbol	Description
Solenoid	SL4	Paper-feed pickup solenoid
Photointerrupter	PS1201	Paper-feeder-cassette paper-out sensor

Paper feeder operation

The paper feeder picks up the paper from the cassette and feeds it to the product.

Figure 1-27 Paper feeder electrical components

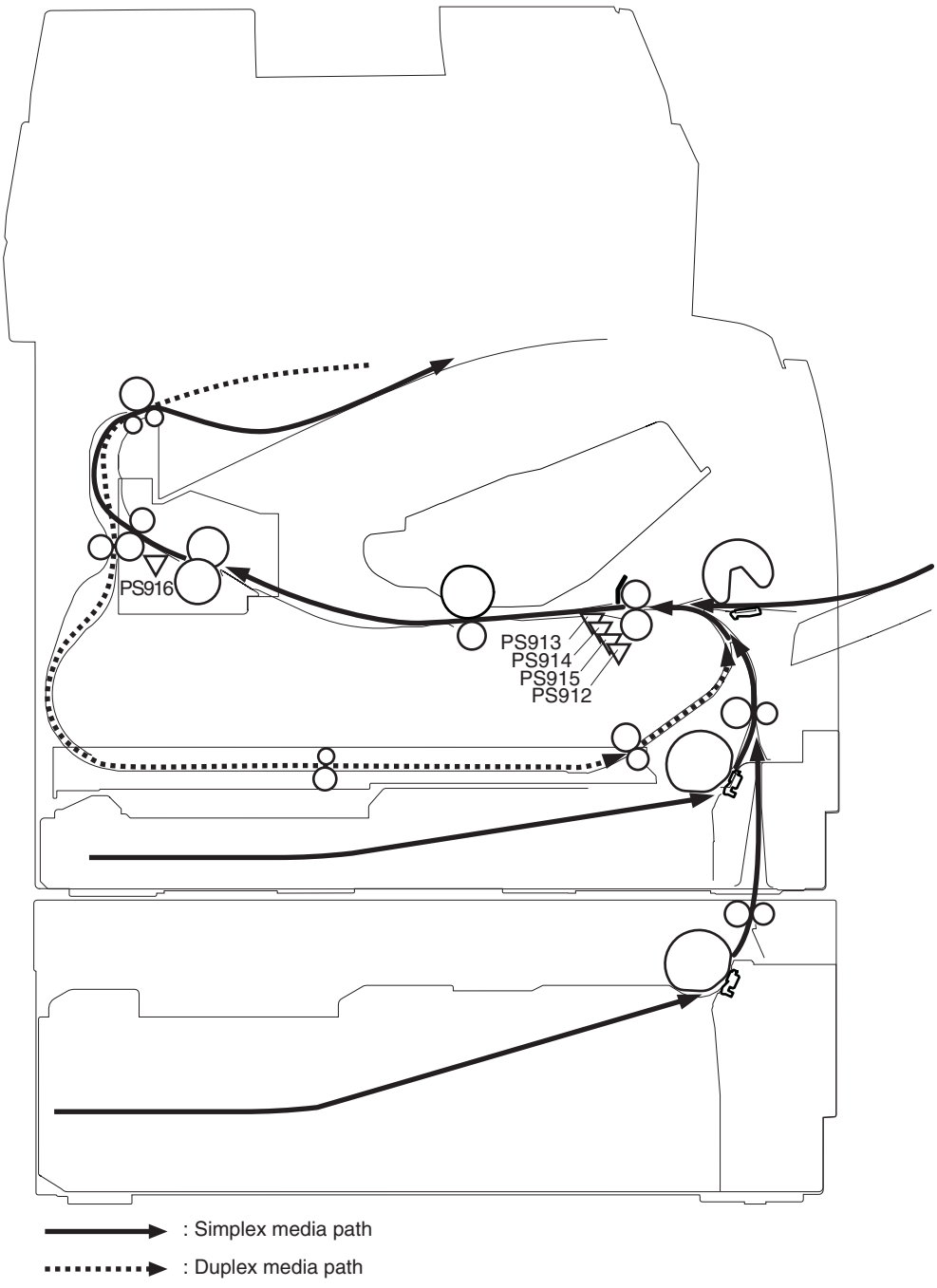


Number	Description	Signal
SL4	Tray 3 cassette pickup solenoid	Tray 3 cassette pickup solenoid control signal
PS1201	Tray 3 cassette paper presence sensor	Tray 3 cassette paper presence signal

Jam detection

The product uses the following sensors to detect the presence of paper and to check whether the paper is being fed correctly or has jammed.

Figure 1-28 Jam detection sensors



Number	Description
PS912	Top-of-page sensor

Number	Description
PS913	Paper-width sensor
PS914	Left paper-width sensor
PS915	Right paper-width sensor
PS916	Fuser output sensor

Paper jam events in the paper feeder are detected by the DC controller. The product detects the following jams:

- Pickup delay jam
- Pickup stationary jam
- Delivery delay jam
- Delivery stationary jam
- Fuser wrapping jam
- Door open jam
- Residual paper jam
- Duplex reverse jam 1
- Duplex reverse jam 2

Scanner system

The flatbed image scanner captures an electronic image of the document on the glass. The scanner does this by illuminating the document with LEDs (red, green, and blue) and capturing the image in the image sensor to create an electronic format of the document. The flatbed scanner consists of three main elements.

- **CIS scanner**. The CIS (contact image sensor) scanner captures an image using the product's optical path. Red, green, and blue LEDs sequentially illuminate a small strip of the document (often called a raster line), and the optical system captures each color in a single row of CCD sensors that cover the entire page width. Because only one color is captured for each line per exposure, the three colors are recombined electronically to create the full color image. For monochromatic scans or copies, all three LEDs are illuminated to create a white light for the scan so the raster line can be captured in one exposure.
- **Mechanical carriage drive**. The carriage drive moves the CIS scan head along the document length to create the image. In this product, a small DC motor with an optical encoder creates this motion. The speed of the carriage drive is proportional to the scan resolution (300 ppi is much faster than 1200 ppi) and also proportional to the type of scan (color scans are three-times slower than monochromatic scans). A 1200 ppi color scan moves so slowly that the product may appear to not be working, whereas a monochromatic copy scan moves at 50 times that speed and will be a little noisy.
- **Image processing system (formatter)**. The formatter processes the scanner data into either a copy or a scan to the computer. For copies, the image data is sent directly to the product without being transmitted to the computer. Depending on user selections for the copy settings, the formatter enhances the scanner data significantly before sending it to the product. Image data is captured at 300 ppi for copies and is user selectable for scans to the computer. Each pixel is represented by 8 bits for each of the three colors (256 levels for each color), for a total of 24 bits per pixel (24-bit color).

Scanner power-on sequence of events

When the product is turned on, it performs the following tests:

- **Motor test**. The product moves the motor left and right to confirm operation. It reports a scanner error 12 if no motion is detected in the motor encoder system.
- **Wall find**. The scan carriage moves slowly to the left while watching an encoder on the carriage motor to determine when the carriage has found the side wall or stop. This enables the product to identify the document origin (position of the original). If the document origin cannot be located, a default position is used instead.
- **LED check**. The product moves the carriage to the white calibration label under the left side of the flatbed image scanner, and it verifies that the minimum and maximum response is acceptable. It reports a scanner error 14 if the response is unacceptable.
- **Home find**. The scan carriage uses the optical scanner to find physical reference features that relate to the document origin at the left side of the image glass. This process ensures accurate location of the first document pixels so that the user documents will have an accurate placement of

the image on scans and copies. It reports a scanner error 6 message if the reference features are not found.

- **Calibration**. This test, also known as scanner color calibration, enables the product to identify the black and white on every pixel in the CCD. Calibration occurs in two major processes: a broad (analog) adjustment of all pixels to bring them into the target output range, and a pixel-by-pixel adjustment (digital) to fine tune the actual black and white response. The calibration process occurs under the left side of flatbed image scanner where there is a special white calibration label.

  Calibration is the most important step in creating a high quality image. Calibration problems can include color inaccuracies, brightness inaccuracies, and vertical streaks through the image. The calibration process identifies any bad pixels and enables the image formatter to recreate the lost information from adjacent pixels. Extreme cases of this problem can appear as large vertical streaks or image smears. The user has no control over the calibration process itself or this pixel-replacement process.

Copy or scan sequence of events

To create an accurate rendition of a document, the scanner must be calibrated for the requested operation. If the user selects a scan at 600 ppi color, the flatbed image scanner calibrates for that specific operational mode. Subsequently, the flatbed image scanner automatically re-calibrates for the next requested operation. Calibration does not occur for every new copy request.

Normal sequence of operation for a flatbed copy or scan job includes the following.

1. LEDs illuminate.
2. Carriage motion begins moving the CIS scanner toward the right.
3. Image capture continues for the entire page or length requested in a scan operation.
4. Carriage returns to the home position on the left.

Fax functions and operation

Computer and network security features

The product can send and receive fax data over telephone lines that conform to public switch telephone network (PSTN) standards. The secure fax protocols make it impossible for computer viruses to be transferred from the telephone line to a computer or network.

The following product features prevent virus transmission:

- No direct connection exists between the fax line and any devices that are connected to the USB or Ethernet ports.
- The internal firmware cannot be modified through the fax connection.
- All fax communications go through the fax subsystem, which does not use Internet data-exchange protocols.

PSTN operation

The PSTN operates through a central office (CO) that generates a constant voltage on the TIP and RING wires (48 V, usually). A device goes on-hook by connecting impedance (such as 600 ohms for the U.S.) across the TIP and RING so that a line current can flow. The CO can detect this current and can send impulses like dial tones. The product generates more signaling tones, such as dialing digits, to tell the CO how to connect the call. The product can also detect tones, such as a busy tone from the CO, that tell it how to behave.

When the call is finally connected, the CO behaves like a piece of wire connecting the sender and receiver. This is the period during which all of the fax signaling and data transfer occurs. When a call is completed, the circuit opens again and the line-current flow ceases, removing the CO connection from both the sender and the receiver.

On most phone systems, the TIP and RING wires appear on pins 3 and 4 of the RJ-11 modular jack (the one on the fax card). These two wires do not have to be polarized because all the equipment works with either TIP or RING on pin 3 and the other wire on pin 4. This means that cables of either polarity can interconnect and will still work.

These basic functions of PSTN operation are assumed in the design of the fax subsystem. The product generates and detects the signaling tones, currents, and data signals that are required to transmit and receive faxes on the PSTN.

Receive faxes when you hear fax tones

In general, incoming faxes to the product are automatically received. However, if other devices are connected to the same phone line, the product might not be set to answer automatically.

If the product is connected to a phone line that receives both fax and phone calls, and you hear fax tones when you answer the extension phone, receive the fax in one of two ways:

- If you are near the product, touch the Start Fax button on the control panel.
- Press 1-2-3 in sequence on the extension phone keypad, listen for fax transmission sounds, and then hang up.

NOTE: In order for the 1-2-3 sequence to work, the Extension Phone setting must be set to On in the Fax Setup menu.

Distinctive ring function

The distinctive ring feature is a service that a telephone company provides. The distinctive ring service allows three phone numbers to be assigned to one phone line. Each phone number has a distinctive ring. The first phone number has a single ring, the second phone number has a double ring, and the third phone number has a triple ring.

NOTE: The product has not been tested with all of the distinctive-ring services that telephone companies provide in all countries/regions. HP does not guarantee that the distinctive-ring function will operate correctly in all countries/regions. Contact the local telephone service provider for assistance.

Set up the distinctive ring function

1. From the Home screen on the product control panel, touch the Setup button.
2. Open the following menus:
   - Fax Setup
   - Basic Setup
   - Distinctive Ring
3. Use the arrow buttons to select one of the following options:
   - All Rings (default setting)
   - Single
   - Double
   - Triple
   - Double and Triple

Use fax with voice over IP services

Voice over IP (VoIP) services provide normal telephone service, including long distance service through a broadband Internet connection. These services use packets to break up the voice signal on a telephone line and transmit it digitally to the receiver, where the packets are reassembled. The VoIP services are often not compatible with fax machines. The VoIP provider must state the service supports fax over IP services.

Because the installation process varies, the VoIP service provider will have to assist in installing the product fax component.

Although a fax might work on a VoIP network, it can fail when the following events occur:

- Internet traffic becomes heavy and packets are lost.
- Latency (the time it takes for a packet to travel from its point of origin to its point of destination) becomes excessive.

If you experience problems using the fax feature on a VoIP network, ensure that all of the product cables and settings are correct. Configuring the Fax Speed setting to Medium(V.17) or Slow(V.29) can also improve your ability to send a fax over a VoIP network.

If you continue to have problems faxing, contact your VoIP provider.

The fax subsystem

The formatter, fax card, firmware, and software all contribute to the fax functionality. The designs of the formatter and fax card, along with parameters in the firmware, determine the majority of the regulatory requirements for telephony on the product.

The fax subsystem is designed to support V.34 fax transmission, lower speeds (such as V.17 fax), and older fax machines.

Fax card in the fax subsystem

Two versions of the fax card are used in the product. One is used in the North American, South American, and Asian countries/regions. The other is used primarily in European countries/regions.

The fax card contains the modem chipset (DSP and CODEC) that controls the basic fax functions of tone generation and detection, along with channel control for fax transmissions. The CODEC and its associated circuitry act as the third-generation silicon data access arrangement (DAA) to comply with worldwide regulatory requirements.

The only difference between the two versions is that each version is compliant with the 2/4-wire phone jack system from the respective country/region.

Safety isolation

The most important function of the fax card is the safety isolation between the high-voltage, transient-prone environment of the telephone network (TNV [telephone network voltage]) and the low-voltage analog and digital circuitry of the formatter (SELV [secondary extra-low voltage]). This safety isolation provides both customer safety and product reliability in the telecom environment.

Any signals that cross the isolation barrier do so magnetically. The breakdown voltage rating of barrier-critical components is greater than 5 kV.

Safety-protection circuitry

In addition to the safety barrier, the fax card protects against overvoltage and overcurrent events.

Telephone overvoltage events can be either differential mode or common mode. The event can be transient in nature (a lightning-induced surge or ESD) or continuous (a power line crossed with a phone line). The fax card protection circuitry provides margin against combinations of overvoltage and overcurrent events.

Common mode protection is provided by the selection of high-voltage-barrier critical components (transformer and relay). The safety barrier of the fax card printed circuit board traces and the clearance between the fax card and surrounding components also contribute to common mode protection.

A voltage suppressor (a crowbar-type SIDACTOR) provides differential protection. This product becomes low impedance at approximately 300 V differential, and crowbars to a low voltage. A series thermal switch works in conjunction with the crowbar for continuous telephone line events, such as crossed power lines.

All communications cross the isolation barrier magnetically. The breakdown voltage rating of barrier-critical components is greater than 5 kV.

Data path

TIP and RING are the two-wire paths for all signals from the telephone network. All signaling and data information comes across them, including fax tones and fax data.

The telephone network uses DC current to determine the hook state of the telephone, so line current must be present during a call. The silicon DAA provides a DC holding circuit to keep the line current constant during a fax call.

The silicon DAA converts the analog signal to a digital signal for DSP processing, and also converts the digital signal to an analog signal for transmitting data through a telephone line.

The magnetically coupled signals that cross the isolation barrier go either through a transformer or a relay.

The DSP in the fax card communicates with the ASIC in the formatter using the high-speed serial interface.

Hook state

Another magnetically coupled signal is the control signal that disconnects the downstream devices (such as a telephone or answering machine). A control signal originating on the DSP can change the relay state, causing the auxiliary jack (downstream jack) to be disconnected from the telephone circuit.

The product takes control of calls that it recognizes as fax calls. If the product does not directly pick up the call, it monitors incoming calls for the fax tone or for the user to direct it to receive a fax. This idle mode is also called eavesdropping. This mode is active when the product is on-hook but current exists in the downstream phone line because another device is off-hook. During eavesdropping, the receive circuit is enabled but has a different gain from the current that is generated during normal fax transmissions.

The product does not take control of the line unless it detects a fax tone or the user causes it to connect manually. This feature allows the user to make voice calls from a phone that is connected to the product without being cut off if a fax is not being received.

Downstream device detection

The line voltage monitoring module of the silicon DAA can detect the line state as well as the downstream device. It tells DSP via DIB that an active device (telephone, modem, or answering machine) is connected to the auxiliary port on the product (the right side of the RJ-11 jack). The DSP uses the signal to ensure that the product does not go off-hook (and disconnect a downstream call) until it has been authorized to do so (by a manual fax start or the detection of the appropriate tones).

Hook switch control

In the silicon DAA, the CODEC controls the hook switch directly. The CODEC is activated when it receives commands from the DSP. When the circuit is drawing DC current from the central office, it is considered off-hook. When no DC current flows, the state is considered on-hook.

Ring detect

Ring detect is performed by the line voltage monitoring module of the silicon DAA, and is a combination of voltage levels and cadence (time on and time off). Both must be present to detect a valid ring. The CODEC works with DSP as well as the firmware to determine if an incoming signal is an answerable ring.

Line current control

The DC current from the CO needs to have a path to flow from TIP to RING. The DC impedance emulation line modulator and DC terminations modules in the silicon DAA act as a DC holding circuit, and works with the firmware to achieve the voltage-current characteristic between TIP and RING. The impedance (the current-voltage characteristic) changes depending on certain special events, such as pulse dialing or when the product goes on-hook.

Billing- (metering-) tone filters

Switzerland and Germany provide high-frequency AC signals on the telephone line in order to bill customers.

A filter in a special fax cable (for certain countries/regions), can filter these signals. Because these billing signals are not used in the U.S., these filters are not present in the U.S. fax cable.

To obtain a special fax cable, contact your local telephone service provider.

Fax page storage in flash memory

Fax pages are the electronic images of the document page. They can be created in any of three ways: scanned to be sent to another fax machine, generated to be sent by the computer, or received from a fax machine to be printed.

The product stores all fax pages in flash memory automatically. After these pages are written into flash memory, they are stored until the pages are sent to another fax machine, printed on the product, transmitted to a computer, or erased by the user.

These pages are stored in flash memory, which is the nonvolatile memory that can be repeatedly read from, written to, and erased. The product has 8 MB of flash memory, of which 7.5 MB is available for

fax storage. The remaining 0.5 MB is used for the file system and reclamation. Adding RAM does not affect the fax page storage because the product does not use RAM for storing fax pages.

Stored fax pages

The user can reprint stored fax receive pages in case of errors. For a fax send, the product will resend the fax in case of errors. The product will resend stored fax pages after a busy signal, communication error, no answer, or power failure. Other fax devices store fax pages in either normal RAM or short-term RAM. Normal RAM immediately loses its data when power is lost, while short-term RAM loses its data about 60 minutes after power failure. Flash memory maintains its data for years without any applied power.

Advantages of flash memory storage

Fax pages that are stored in flash memory are persistent. They are not lost as a result of a power failure, no matter how long the power is off. Users can reprint faxes in case the print cartridge runs out of toner or the product experiences other errors while printing faxes.

The product also has scan-ahead functionality that makes use of flash memory. Scan-ahead automatically scans pages into flash memory before a fax job is sent. This allows the sender to pick up the original document immediately after it is scanned, eliminating the need to wait until the fax is transmission is complete.

Because fax pages are stored in flash memory rather than RAM, more RAM is available to handle larger and more complicated copy and print jobs.

USB flash drive

The product features printing from a USB flash drive. The product prints the following file types from the USB flash drive.

- PDF
- RGB JPEG

When a USB flash drive is inserted into the front of the product, the control panel will display the USB Flash Drive menu. The files on the USB flash drive can be accessed from the control panel using the touchscreen. Any RGB JPEG or PDF files on the USB flash drive can be printed directly from the product control panel.

2 Solve problems

- Solve problems checklist
- Menu map
- Troubleshooting process
- Tools for troubleshooting
- Clear jams
- Solve paper-handling problems
- Solve image quality problems
- Clean the product
- Solve performance problems
- Solve connectivity problems
- Service mode functions
- Solve fax problems
- Manually update the firmware

Solve problems checklist

1. Make sure that the product is set up correctly.
   a. Press the power button to turn on the product or to deactivate the Auto-Off mode.
   b. Check the power-cable connections.
   c. Make sure that the line voltage is correct for the product power configuration. (See the label that is on the back of the product for voltage requirements.) If you are using a power strip and its voltage is not within specifications, plug the product directly into the wall. If it is already plugged into the wall, try a different outlet.
2. Check the cabling.
   a. Check the cable connection between the product and the computer. Make sure that the connection is secure.
   b. Make sure that the cable itself is not faulty by using a different cable, if possible.
   c. Check the network connection: Make sure the network light is lit. The network light is next to the network port on the back of the product.

      If the product remains unable to connect to the network, uninstall and then reinstall the product. If the error persists, contact a network administrator.
3. Check to see if any messages appear on the control panel.
4. Make sure that the paper that you are using meets specifications.
5. Make sure that the paper is loaded correctly in the input tray.
6. Make sure that the product software is installed correctly.
7. Verify that you have installed the printer driver for this product, and that you are selecting this product from the list of available printers.
8. Print a configuration page.
   a. If the page does not print, verify that the input tray contains paper and that the paper is properly loaded.
   b. Make sure that the toner cartridge is installed correctly.

c. If the page jams in the product, clear the jam.

d. If the print quality is unacceptable, complete the following steps:

- Verify that the print settings are correct for the paper that you are using.
- Solve print-quality problems.

9. Print a small document from a different program that has worked in the past. If this solution works, then the problem is with the program you are using. If this solution does not work (the document does not print), complete these steps:

a. Try printing the job from another computer that has the product software installed.

b. Check the cable connection. Direct the product to the correct port, or reinstall the software, selecting the connection type that you are using.

Menu map

Use the following procedure to print a control-panel menu layout map.

1. From the Home screen, touch the Setup button.
2. Touch the Reports button.
3. Touch the Menu Structure button.

Troubleshooting process

When the product malfunctions or encounters an unexpected situation, the product control panel alerts you to the situation. This chapter contains information to help diagnose and solve problems.

- Use the pre-troubleshooting checklist to evaluate the source of the problem and to reduce the number of steps that are required to fix the problem.
- Use the troubleshooting flowchart to pinpoint the root cause of hardware malfunctions. The flowchart guides you to the section of this chapter that contains steps for correcting the malfunction.

Before beginning any troubleshooting procedure, check the following issues:

- Are supply items within their rated life?
- Does the configuration page reveal any configuration errors?

NOTE: The customer is responsible for checking supplies and for using supplies that are in good condition.

Pre-troubleshooting checklist

The following table includes basic questions to ask the customer to quickly help define the problem(s).

General topic	Questions
Environment	• Is the product installed on a solid, level surface (+/- 1°)? • Is the power-supply voltage within ± 10 volts of the specified power source? • Is the power-supply plug inserted in the product and the outlet? • Is the operating environment within the specified parameters? • Is the product exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials? **NOTE:** Diazo copiers produce ammonia gas as part of the copying processes. Ammonia gas (from cleaning supplies or a diazo copier) can have an adverse effect on some product components (for example, the toner cartridge OPC). • Is the product exposed to direct sunlight?
Media	• Does the customer use only supported media? • Is the media in good condition (no curls, folds, or distortion)? • Is the media stored correctly and within environmental limits?
Input trays	• Is the amount of media in the tray within specifications? • Is the media correctly placed in the tray? • Are the paper guides aligned with the stack? • Is the tray correctly installed in the product?

General topic	Questions
Toner cartridge	• Is the toner cartridge installed correctly?
Transfer unit and fuser	• Are the transfer unit and fuser installed correctly?
Covers	• Is the front cover closed?
Condensation	• Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe affected parts dry or leave the product on for 10 to 20 minutes. • Was a toner cartridge opened soon after being moved from a cold to a warm room? If so, allow the toner cartridge to sit at room temperature for 1 to 2 hours.
Miscellaneous	• Check for and remove any non-HP components (toner cartridges, memory modules, and EIO cards) from the product. • If the hardware or software configuration has not changed or the problem is not associated with any specific software, see the complete service manual for this product. • Remove the product from the network and ensure that the failure is associated with the product before beginning troubleshooting. • For any print-quality issues, calibrate the product.

Determine the problem source

The following table includes basic questions to ask the customer to quickly help define the problem or problems.

General topic	Questions
Environment	• Is the product installed on a solid, level surface (± 1°)? • Is the power-supply voltage within ± 10 volts of the specified power source? • Is the power-supply plug inserted in the product and the outlet? • Is the operating environment within the specified parameters? • Is the product exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials? **NOTE:** Diazo copiers produce ammonia gas as part of the coping processes. Ammonia gas (from cleaning supplies or a diazo copier) can have an adverse affect on some product components (for example, the toner cartridge imaging drum). • Is the product exposed to direct sunlight?
Paper	• Does the customer use only supported paper? • Is the paper in good condition (no curls, folds, or distortion)? • Is the paper stored correctly and within environmental limits?
Input tray	• Is the amount of paper in the tray within specifications? • Is the paper correctly placed in the tray? • Are the paper guides aligned with the stack?
Supplies	• Is the toner cartridge installed correctly and firmly seated? • Has the sealing tape been removed from the toner cartridge? • Is the toner cartridge within its estimated life? (Check the supplies status page.)
Transfer roller and fuser	• Are the transfer roller and fuser installed correctly?
Covers	• Are the front and rear doors firmly closed?
Condensation	• Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe affected parts dry or leave the product on for 90 to 120 minutes. • Was a toner cartridge opened soon after being moved from a cold to a warm room? If so, allow the toner cartridge to sit at room temperature for 1 to 2 hours.
Miscellaneous	• Check for and remove any non-HP components (for example, a toner cartridge) from the product. • Remove the product from the network and make sure that the failure is with the product before beginning troubleshooting.

Power subsystem

Power-on checks

When you turn on the product, if it does not make any sound or if the control-panel display is blank, check the following items:

- Verify that the product is plugged directly into an active electrical outlet that has the correct voltage. Do not plug the product into a surge protector or power strip.
- Verify that the on/off switch is in the on position.
- Verify that the formatter is seated and operating correctly.
- Remove any HP Jetdirect accessories or other devices, and then try to turn the product on again.
- Make sure that the control-panel display is connected.
- Check the two fuses on the power supply.
- If necessary, replace the power supply.
- If necessary, replace the DC controller.

Control-panel checks

Use the product control panel to conduct tests on the control panel LEDs, display, or buttons.

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the left arrow button, and then quickly touch the Cancel button. The display should return to Ready status.
3. Press the Setup button again to open the menus. The first menu should be the 2ndary Service menu.
4. Touch the 2ndary Service menu, and then scroll to one of the following menu items.
   - LED Test
   - Display Test
   - Button Test
5. Touch the menu item to begin the test.
6. After the test has finished, return the product to the Ready state, and then touch the Cancel button to remove the 2ndary Service menu from the menu list.

Tools for troubleshooting

Component diagnostics

LED diagnostics

Network LEDs

The onboard network solution has two network port LEDs. When the product is connected to a properly working network through a network cable, the yellow LED indicates network activity, and the green LED indicates the link status. A blinking yellow LED indicates network traffic. If the green LED is off, a link has failed.

For link failures, check all of the network cable connections. In addition, you can try to manually configure the network card link speed setting by using the product control-panel.

Change the Link Speed setting

1. From the Home screen on the product control panel, touch the Setup button.
2. Scroll to, and then touch the Network Setup menu.
3. Scroll to, and then touch Link Speed item.
4. Touch the appropriate link speed.

Control panel LEDs

The state of the Ready light and Attention light on the product signal the product status. The following table outlines the possible control-panel light states.

Product state	Ready light state	Attention light state
Initializing	Blinking	Blinking
Ready	On	Off
Receiving data/processing job or cancelling job	Blinking	Off
Error message	Off	Blinking
Fatal error (49 or 79 error)[1]	On	On

[1] The product will power off and then power on after one of these errors occurs.

Engine diagnostics

Engine test

If the duplex unit is disabled, the engine test produces a single-sided sheet with horizontal lines when you perform the engine test. If the duplex unit is activated (the default state), the engine test produces a double-sided sheet with horizontal lines when you perform the engine test.

To perform the test, with the product in the Ready state, open and shut the cartridge door three times. If the engine is functioning properly, the product will initialize and then print the test page

Diagrams

Plug/jack locations

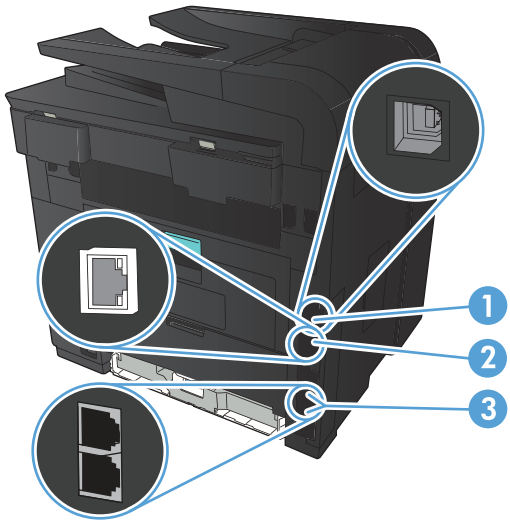


Table 2-1 Plug/jack locations

Item	Description
1	Hi-Speed USB 2.0 port
2	Network port
3	Fax ports

Locations of major components

Figure 2-1 Major components (1 of 2)

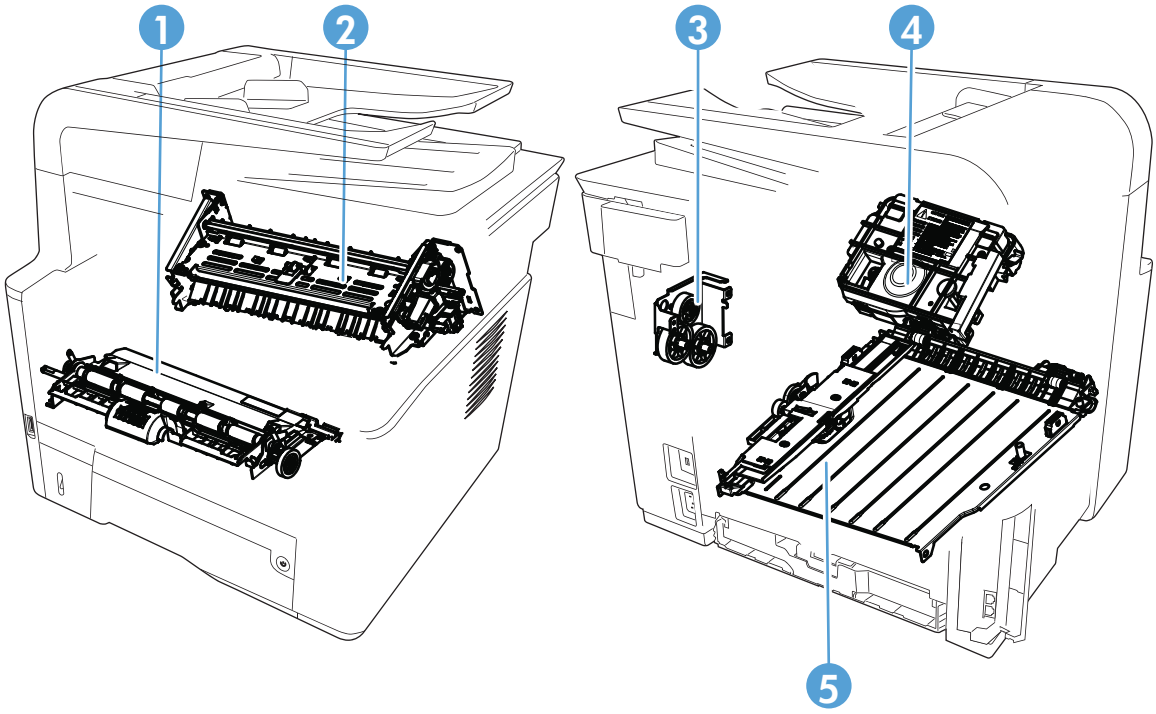


Table 2-2 Major components (1 of 2)

Item	Description
1	Registration assembly
2	Fuser assembly
3	Feed drive assembly (simplex models) Duplex drive assembly (duplex models)
4	Laser scanner assembly
5	Duplex feed assembly

Figure 2-2 Major components (2 of 2)

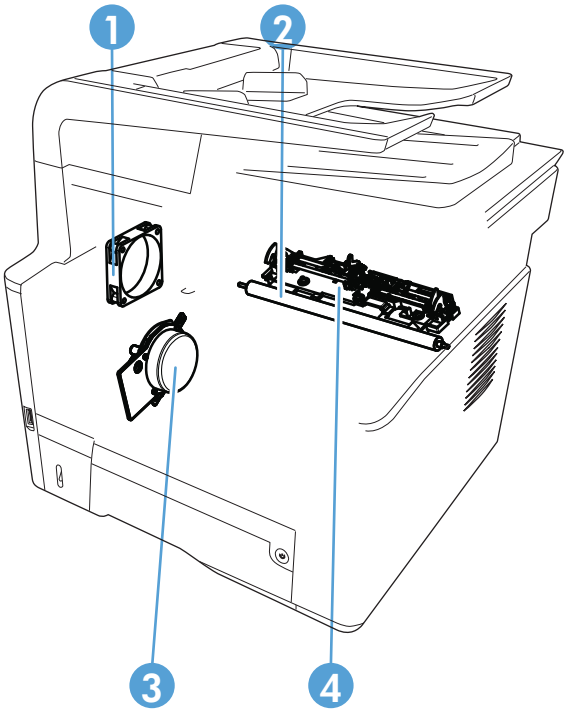


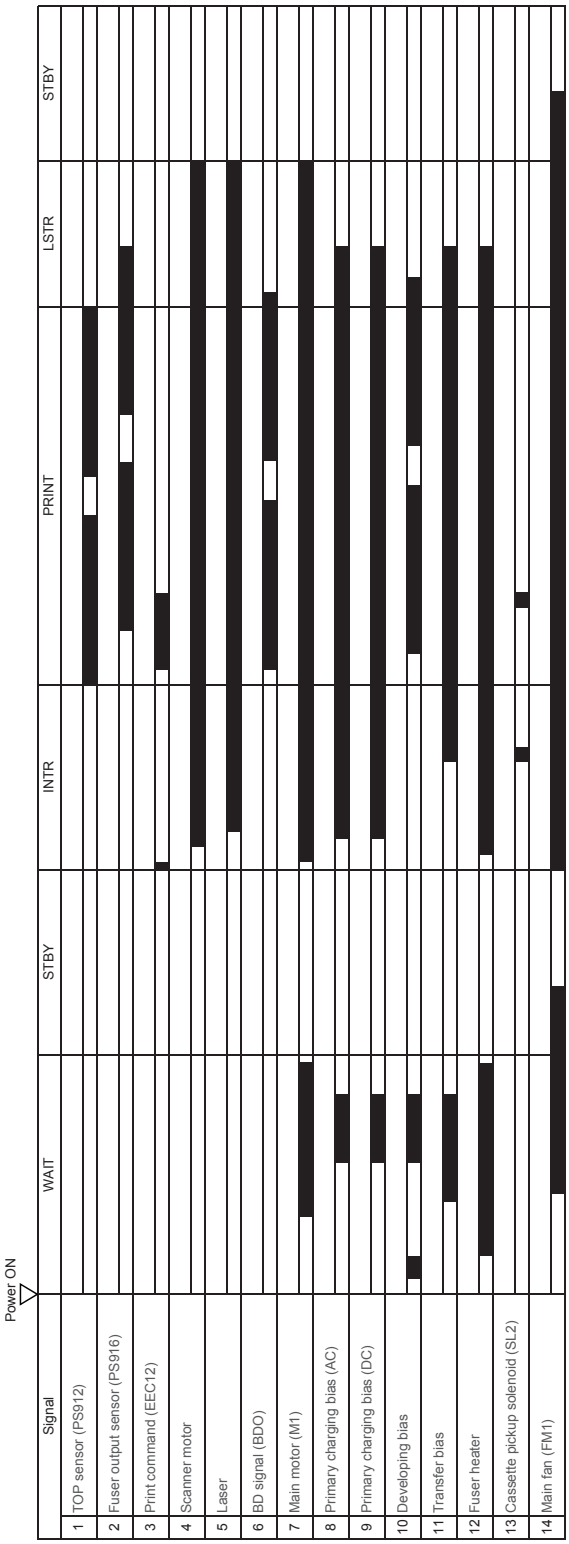
Table 2-3 Major components (2 of 2)

Item	Description
1	Fan
2	Transfer roller
3	Main motor
4	Sensor assembly

General timing chart

The following charts lists the approximate timing for this product, specified in seconds.

Figure 2-3 Timing diagram



General circuit diagrams

Figure 2-4 Circuit diagram — main unit (1 of 2)

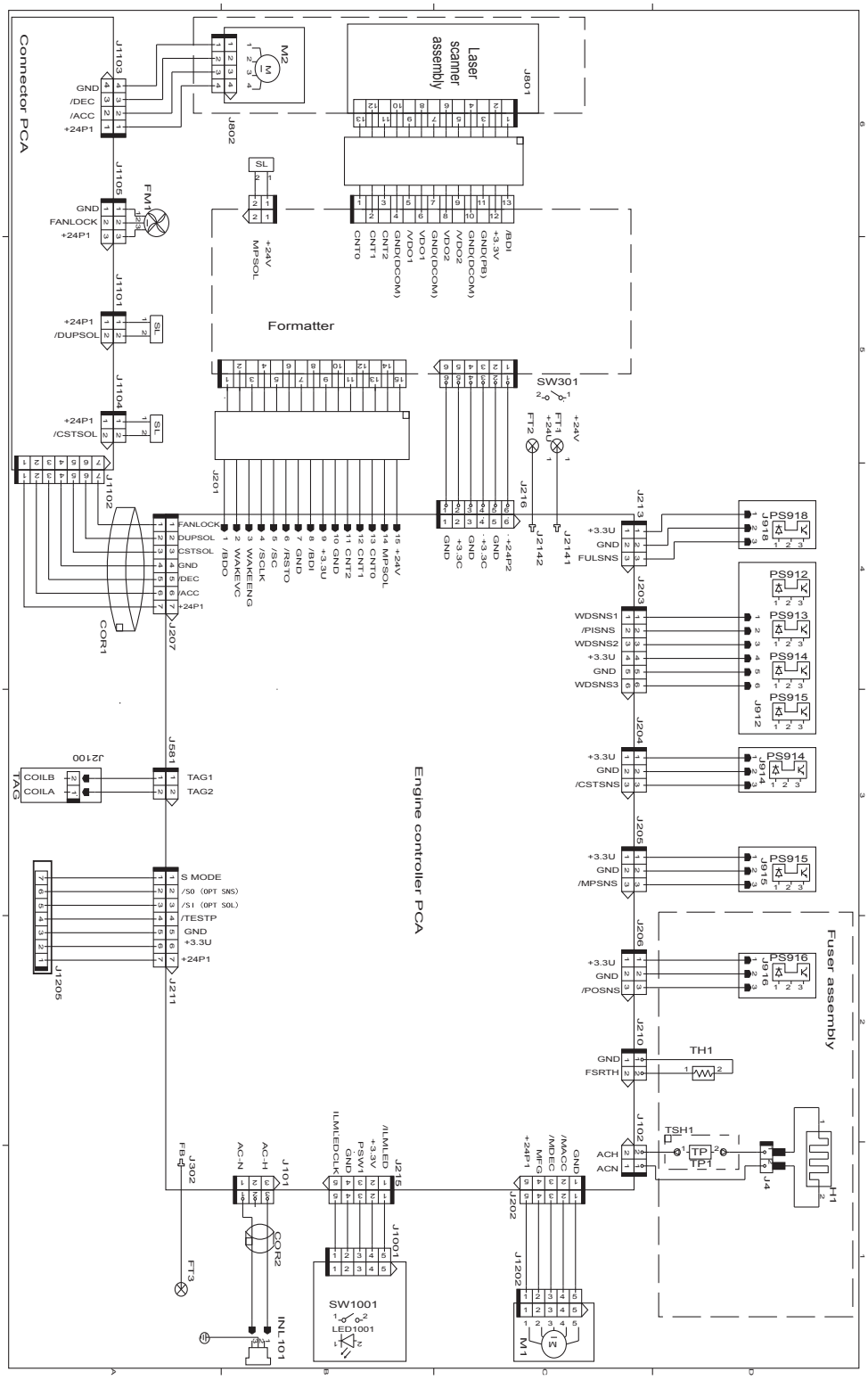


Figure 2-5 Circuit diagram — main unit (2 of 2)

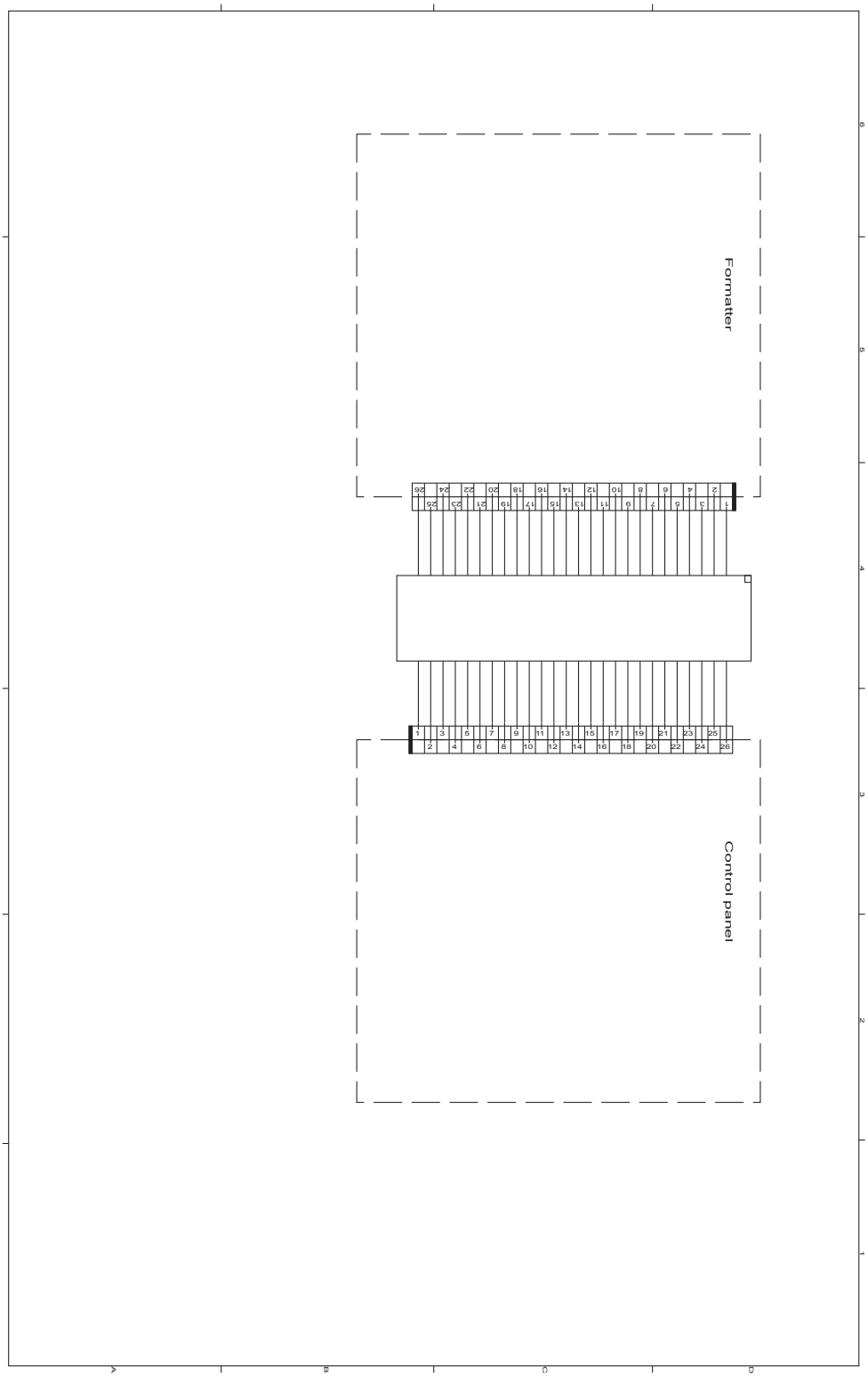
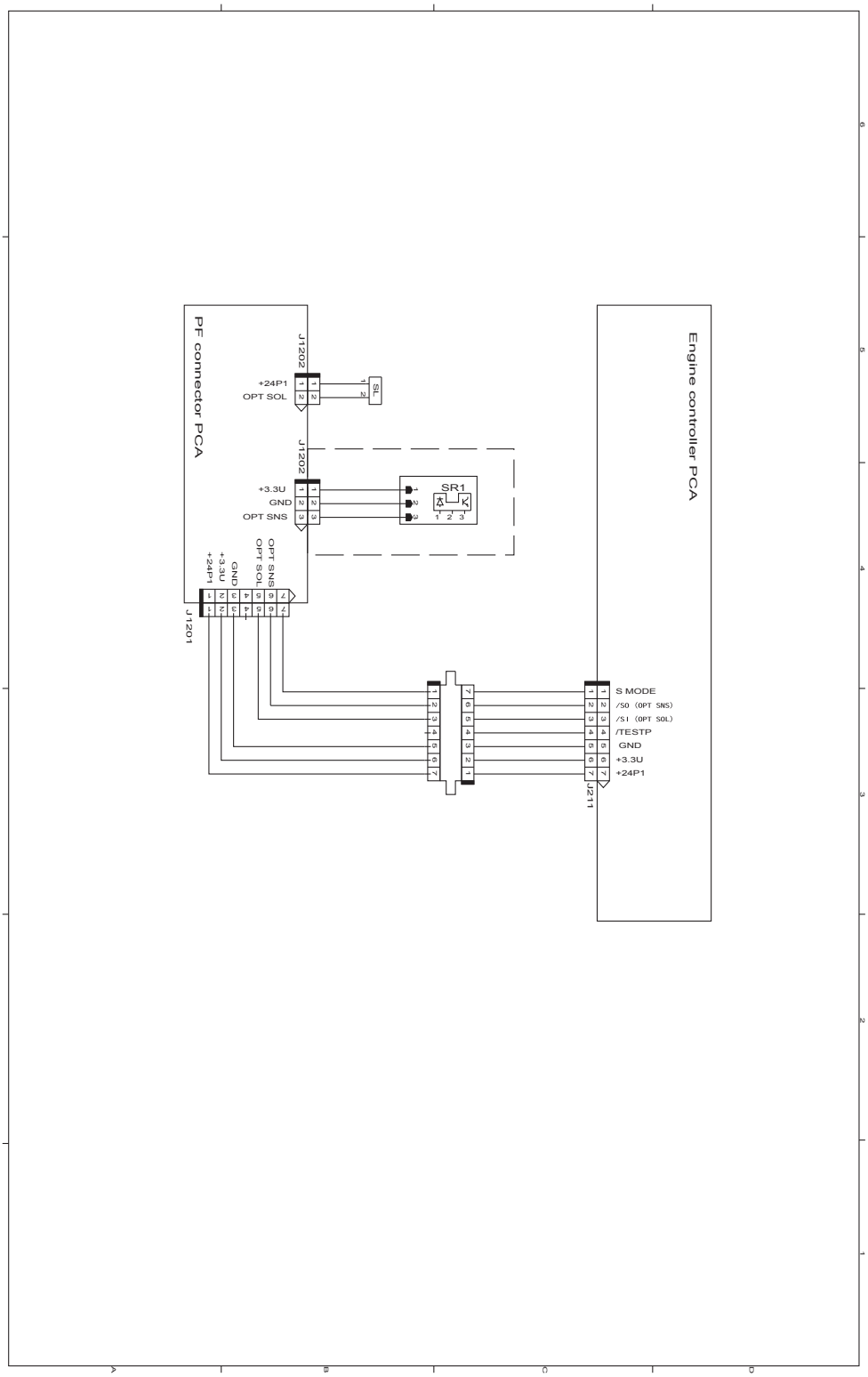


Figure 2-6 Circuit diagram — optional Tray 3



Use HP Device Toolbox (Windows)

Use the **HP Device Toolbox** for Windows to view or change product settings from your computer. This tool opens the HP Embedded Web Server for the product.

NOTE: This tool is available only if you performed a full installation when you installed the product. The HP Embedded Web Server, however, is still available by opening a Web browser and entering the product IP address in the browser address box.

1. Click the **Start** button, and then click the **Programs** item.
2. Click your HP product group, and then click the **HP Device Toolbox** item.

Tab or section	Description
Home tab Provides product, status, and configuration information.	• **Device Status**: Shows the product status and shows the approximate percent life remaining of HP supplies. • **Supplies Status**: Shows the approximate percent life remaining of HP supplies. Actual supply life remaining can vary. Consider having a replacement supply available to install when print quality is no longer acceptable. The supply does not need to be replaced unless the print quality is no longer acceptable. • **Device Configuration**: Shows the information found on the product configuration page. • **Network Summary**: Shows the information found on the product network configuration page. • **Reports**: Allows you to print the configuration and supplies status pages that the product generates. • **Event Log**: Shows a list of all product events and errors.
System tab Provides the ability to configure the product from your computer.	• **Device Information**: Provides basic product and company information. • **Paper Setup**: Allows you to change the paper-handling defaults for the product. • **Print Quality**: Allows you to change the print quality defaults for the product, including calibration settings. • **Paper Types**: Allows you to configure print modes that correspond to the paper types that the product accepts. • **System Setup**: Allows you to change the system defaults for the product. • **Service**: Allows you to start the cleaning procedure on the product. • **Product Security**: Allows you to set or change the product password. • **Save and Restore**: Save the current settings for the product to a file on the computer. Use this file to load the same settings onto another product or to restore these settings to this product at a later time. **NOTE:** The **System** tab can be password-protected. If this product is on a network, always consult with the administrator before changing settings on this tab.

Tab or section	Description
Print tab Provides the ability to change default print settings from your computer.	• **Printing**: Change the default product print settings, such as number of copies and paper orientation. These are the same options that are available on the control panel. • **PCL5c**: View and change the PCL5c settings. • **PostScript**: Turn off or on the **Print PS Errors** feature.
Networking tab Provides the ability to change network settings from your computer.	Network administrators can use this tab to control network-related settings for the product when it is connected to an IP-based network. It also allows the network administrator to set up wireless direct functionality. This tab does not appear if the product is directly connected to a computer.
HP Web Services tab	Use this tab to set up and use various Web tools with the product.
HP Smart Install tab	Use this tab to download and install the print driver.

Internal print-quality test pages

Clean the paper path

During the printing process, paper, toner, and dust particles can accumulate inside the product. Over time, this buildup can cause print-quality problems such as toner specks or smearing. This product has a cleaning mode that can correct and prevent these types of problems.

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the Service menu.
3. Touch the Cleaning Page button.
4. Load plain letter or A4 paper when you are prompted.
5. Touch the OK button to begin the cleaning process.

   Wait until the process is complete. Discard the page that prints.

Print the configuration page

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the Reports menu.
3. Touch the Configuration Report button to print the report.

Print-quality troubleshooting tools

Repetitive image defect ruler

Defects on product rollers can cause image defects to appear at regular intervals on the page, corresponding to the circumference of the roller that is causing the defect. Measure the distance

between defects that recur on a page. Use the following table or the repetitive-defect ruler to determine which roller is causing the defect. To resolve the problem, try cleaning the roller first. If the roller remains dirty after cleaning or if it is damaged, replace the part that is indicated in Table 2-4 Repetitive defects on page 66.

CAUTION: Do not use solvents or oils to clean rollers. Instead, rub the roller with lint-free paper. If dirt is difficult to remove, rub the roller with lint-free paper that has been dampened with water.

NOTE: The following table replaces the graphical repetitive defect ruler. You can make your own ruler by using these measurements. For the most accurate results, use a metric ruler.

Table 2-4 Repetitive defects

Component	Distance between defects
Primary charging roller	38 mm (1.5 in)
Transfer roller	39 mm (1.54 in)
Developer roller	42 mm (1.65 in)
Registration roller	43 mm (1.69 in)
Fuser film	57 mm (2.24 in)
Pressure roller	63 mm (2.48 in)
Photosensitive drum	75 mm (2.95 in)

Control panel menus

- HP Web Services menu
- Reports menu
- Quick Forms menu
- USB Flash Drive menu
- System Setup menu
- Service menu
- Network Setup menu

HP Web Services menu

Use the HP Web Services menu to set up the HP Web Services features.

Menu item	Description
Print Information Sheet	Prints a report that instructs the user how to set up the HP Web Services features.
Display E-Mail Address	Displays the product email address.
Turn ePrint On/Off	Enables or disables the product HP ePrint functionality.
Turn Apps On/Off	Enables or disables the product HP Web Services applications.
Enable Web Services	Enables the HP Web Services features.
Remove Services	Removes the HP Web Services features from the product.
Clear Apps History	Deletes the stored history of the product HP Web Services applications.
Proxy Settings	Allows you to enter proxy server information for the product internet connection.

Reports menu

Use the Reports menu to print reports that provide information about the product.

Menu item	Description
Demo Page	Prints a sample page that demonstrates print quality.
Menu Structure	Prints a map of the control panel-menu layout. The active settings for each menu are listed.
Configuration Report	Prints a list of all the product settings. Includes network information when the product is connected to a network.

Menu item	Description
Supplies Status	Prints the status for each toner cartridge, including the following information: • Estimated percentage of cartridge life remaining • Approximate pages remaining • Part numbers for HP toner cartridge • Number of pages printed • Information about ordering new HP toner cartridges and recycling used HP toner cartridges
Network Summary	Prints a list of all product network settings
Usage Page	Prints a page that lists PCL pages, PCL 6 pages, PS pages, pages that were jammed or mispicked in the product, and reports the page count
PCL Font List	Prints a list of all the PCL fonts that are installed
PS Font List	Prints a list of all the PostScript (PS) fonts that are installed
PCL6 Font List	Prints a list of all the PCL6 fonts that are installed
Service Page	Provides information on supported paper types, copy settings, and other miscellaneous settings that are not on the configuration page

Quick Forms menu

Menu item	Sub-menu item	Description
Notebook Paper	Narrow Rule Wide Rule Child Rule	Prints pages that have preprinted lines
Graph Paper	1/8 inch 5 mm	Prints pages that have preprinted graph lines
Checklist	1 Column 2 Column	Prints pages that have preprinted lines with check boxes
Music Paper	Portrait Landscape	Prints pages that have preprinted lines for writing music

USB Flash Drive menu

Print Documents	Prints documents stored on the USB drive. Use the arrow buttons to scroll through the documents. Touch the names of documents that you want to print. Touch the summary screen to change settings such as the number of copies, the paper size, or the paper type. Touch the Print button when you are ready to print the documents.
Easy Photo Print	Prints photo files directly from the product. **NOTE:** This menu item is available for LCD control panel models only.
Thumbnail Sheet(s)	Prints a page or pages of 30 "thumbnail" graphic images. **NOTE:** This menu item is available for LCD control panel models only.
View and Print Photos	Previews photos on the USB drive. Use the arrow buttons to scroll through the photos. Touch the preview image for each photo that you want to print. You can adjust the settings, and you can save the changes as the new default settings. When you are ready to print the photos, touch the Print button.
Scan to USB Drive	Scans a document and stores it as a .PDF document or .JPEG image on the USB flash drive.

System Setup menu

In the following table, items that have asterisks (*) indicate the factory default setting.

Menu item	Sub-menu item	Sub-menu item	Description
Language			Select the language for the control panel display messages and the product reports.
Paper Setup	Default Paper Size	Letter A4 Legal	Sets the size for printing internal reports or any print job that does not specify a size. **NOTE:** The default setting is determined by the choice of location during the initial product setup.
	Default Paper Type	A list of available paper types appears.	Select the paper type for printing internal reports or any print job that does not specify a type.
	Tray 1	Paper Type Paper Size	Select the default size and type for Tray 1 from the list of available sizes and types.

Menu item	Sub-menu item	Sub-menu item		Description
	Tray 2	Paper Type Paper Size		Select the default size and type for Tray 2 from the list of available sizes and types.
	Paper Out Action	Wait forever* Cancel Override		Select how the product should react when a print job requires a size or type that is not available or when a specified tray is empty. Select the Wait forever option to make the product wait until you load the correct paper and press the OK button. This is the default setting. Select the Override option to print on a different size or type after a specified delay. Select the Cancel option to automatically cancel the print job after a specified delay. If you select either the Override or Cancel options, the control panel prompts you to specify the number of seconds to delay. Use the arrow buttons to increase (up to 3600 seconds) or decrease the time.
Energy Settings	Sleep Delay	Off 1 Minute 15 Minutes* 30 Minutes 1 Hour 2 Hours		Sets how long the product remains idle before it enters sleep mode. The product automatically exits sleep mode when you send a print job or press a control panel button.
	Auto Power Down	Power Down Delay	Never 30 Minutes 1 Hour 2 Hours 4 Hours 8 Hours 24 Hours	Sets the period of time that must elapse before the product Auto Power Down feature activates.

Menu item	Sub-menu item	Sub-menu item		Description
		Wake Events	USB Job LAN Job Wireless Job (wireless models only) Button Press USB Drive Insert	Enables or disables certain product events (like when a control panel button is pressed) that will cause the product to revert from Auto Power Down mode to Ready status.
Print Density	A range of 1 to 5.			Select the print density level. The default setting is 3
Supply Settings	Black Cartridge	Very Low Setting	Stop Prompt* Continue	Set how the product behaves when the black toner cartridge reaches the very low threshold. • Stop: The product stops printing until you replace the toner cartridge. • Prompt: The product stops printing and prompts you to replace the toner cartridge. You can acknowledge the prompt and continue printing. • Continue: The product alerts you that the toner cartridge is very low, but it continues printing.
		Low Threshold	A percentage range of 1 to 100.	Set the percentage of estimated life remaining at which the product alerts you that the toner cartridge is low.
Administration	Product Security			Enable product security. If turned on, the product prompts you to set a password. After it is set, the password will be needed to change product settings.
	USB Flash Drive	On* Off		Enable or disable the walkup USB port.
Display Contrast	Medium* Darker Darkest Lightest Lighter			Select the level of contrast for the display.

Menu item	Sub-menu item	Sub-menu item	Description
Courier Font	Regular* Dark		Selects a version of the Courier font..
Quiet Mode			Enable or Disable the product Quiet Mode.

Service menu

Use this menu to restore default settings, clean the product, and activate special modes that affect print output. Items that have asterisks (*) indicate the factory default setting.

Menu item	Sub-menu item	Sub-menu item	Description
Fax Service	Clear Saved Faxes		Touch the OK button to clear any fax messages stored in the product memory.
	Run Fax Test		The product prints a fax test page.
	Print T.30 Trace	Now Never* If Error At End of Call	Use this menu either to manually print a T30 trace report, or to set up automatic report printing.
	Error Correction	On* Off	Use this menu to enable or disable the error correction feature for the product fax accessory.
	Fax Service Log		The product prints a fax service report.
Cleaning Page			Use this option to clean the product if you see toner specks or other marks on the printed output. The cleaning process removes dust and excess toner from the paper path. When you select this item, the product prompts you to load plain paper in Tray 1 and then press the OK button to start the cleaning process. Wait until the process is complete. Discard the page that prints.

Menu item	Sub-menu item	Sub-menu item	Description
USB Speed	High* Full		Sets the USB speed to High or Full. For the product to actually operate at high speed, it must have high speed enabled and be connected to an EHCI host controller that is also operating at high speed. This menu item also does not reflect the current operating speed of the product.
Less Paper Curl	On Off*		If printed pages are consistently curled, use this option to set the product to a mode that reduces curl.
Archive Print	On Off*		If you are printing pages that will be stored for a long time, use this option to set the product to a mode that reduces toner smearing and dusting.
Firmware Date			Displays the current firmware datecode.
Restore Defaults			Sets all customized copy settings to the factory default values.
Signature Check	Cancel if Invalid* Prompt if Invalid		Configures how the product proceeds when a firmware upgrade file does not have a valid signature.
HP Smart Install	On* Off		Enables or disables the HP Smart Install functionality.
LaserJet Update	Check For Updates Now		Prompts the product to search for a newer firmware upgrade file and then upload it.
	Manage Updates	Allow Downgrade	Yes*: Allows the firmware upgrade functionality to upload an older firmware version. No: Prevents the product from loading older firmware files.
		Check Automatically	On*: Allows the product to automatically search for new firmware updates. Off: Prevents the product from loading new firmware update files.

Menu item	Sub-menu item	Sub-menu item	Description
		Prompt Before Install	Install Automatically: Allows the product to automatically load a firmware update file. Always Prompt*: Causes the product to display a prompt at the control panel before the product can load a firmware update file.
		Allow Updates	Yes*: Allows the product to load firmware update files. No: Prevents the product from loading firmware update files.

Network Setup menu

Use this menu to establish network configuration settings.

Menu item	Sub-menu item	Description
Wireless Menu (wireless products only)	Wireless Direct Settings	
	Wireless Setup Wizard	
	Wi-Fi Protected Setup	If your wireless router supports this feature, use this method to set up the product on a wireless network. This is the simplest method.
	Run Wireless Test	Tests the wireless network and prints a report with the results.
	Turn Wireless On/Off	Enable or disable the wireless network feature.
TCP/IP Config	Automatic* Manual	Select Automatic to automatically configure all the TCP/IP settings. Select Manual to manually configure the IP address, subnet mask, and default gateway.
IPv4 Config Method	DHCP BOOTP Auto IP Manual	Set the IPv4 configuration method.
Card Sharing	On* Off	Enable or disable file sharing of a memory card that has been inserted into the product walkup USB port.
Auto Crossover	On* Off	This item is used when you are connecting the product directly to a personal computer using an Ethernet cable (you might have to set this to On or Off depending on the computer being used).
Network Services	IPv4 IPv6	This item is used by the network administrator to limit the network services available on this product. On Off The default setting is On.
Show IP Address	No* Yes	No: The product IP address will not appear on the control panel display. Yes: The product IP address will appear on the control panel display.

Menu item	Sub-menu item	Description
Link Speed	Automatic (Default)	Sets the link speed manually if needed.
	10T Full	After setting the link speed, the product automatically restarts.
	10T Half	
	100TX Full	
	100TX Half	
Security	Product Security	Enable product security. If turned on, the product prompts you to set a password. After it is set, the password will be needed to change product settings.
	HTTPS Enforcement	Enable or disable the HTTPS Enforcement setting. The default setting is On.
	Firewall	Enable, disable, or reset the product firewall.
	Access Control List	Enable, disable, or reset the network access control list.
	802.1x (wireless models only)	Enable or disable the 802.1x wireless authentication protocol.
	Reset All Security	Reset the security settings to the factory-set default values.
Restore Defaults		Press the OK button to restore the network configuration settings to the default values.
USB Flash Drive	On	Enable or disable the walkup USB port.
	Off	

Interpret control-panel messages

Control panel message types

Alert and warning messages appear temporarily and might require you to acknowledge the message by touching the OK button to resume or by touching the Cancel ✕ button to cancel the job. With certain warnings, the job might not complete or the print quality might be affected. If the alert or warning message is related to printing and the auto-continue feature is on, the product will attempt to resume the printing job after the warning has appeared for 10 seconds without acknowledgement.

Critical error messages can indicate some kind of failure. Turning off and then turning on the power might fix the problem. If a critical error persists, the product might require service.

Control panel messages

49 Error, Turn off then on

Description

The product experienced an internal error.

Recommended action

Turn the product off, wait at least 30 seconds, and then turn the product on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

50.x Fuser Error

Description

The product has experienced an error with the fuser.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

Turn off the product, wait at least 25 minutes, and then turn on the product.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

51.XX Error

Description

The product has experienced an internal hardware error.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product on.

If the message persists, contact HP support.

54.XX Error

Description

The product has experienced an error with one of the internal sensors.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

55.X Error

Description

The product has experienced an internal error.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

57 Fan Error, Turn off then on

Description

The product has experienced a problem with its internal fan.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

59.X Error

Description

The product has experienced a problem with one of the motors.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

79 Error Turn off then on

Description

The product has experienced an internal firmware error.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

79 Service error

Description

An incompatible DIMM is installed.

Recommended action

1. Turn the product power off.
2. Install a DIMM that the product supports.
3. Turn the product on.

If the message persists, contact HP support. For a list of supported DIMMs, see the user guide.

Black cartridge low

Description

The toner cartridge is nearing the end of its useful life.

Recommended action

Printing can continue, but consider having a replacement toner cartridge on hand.

Black cartridge very low

Description

The toner cartridge is at the end of its useful life. A customer configurable option on this product is "Prompt to Remind Me in 100 pages, 200 pages, 300 pages, 400 pages, or never." This option is provided as a customer convenience and is not an indication these pages will have acceptable print quality.

Recommended action

To ensure optimal print quality, HP recommends replacing the toner cartridge at this point. You can continue printing until you notice a decrease in print quality. Actual cartridge life may vary.

Once an HP toner cartridge has reached very low, HP's Premium Protection Warranty on that toner cartridge has ended. All print defects or cartridge failures incurred when an HP toner cartridge is used in continue at very low mode will not be considered to be defects in materials or workmanship in the toner cartridge under the HP Print Cartridge Warranty Statement.

Cleaning

Description

The product periodically performs a cleaning procedure to maintain the best print quality.

Recommended action

Wait for the cleaning process to finish.

Communication error.

Description

A fax communication error occurred between the product and the sender or receiver.

Recommended action

Allow the product to retry sending the fax. Unplug the product telephone cord from the wall, plug in a telephone, and try making a call. Connect the product phone cord into a jack for another phone line.

Try a different phone cord.

Set the Fax Speed option to the Slow(V.29) setting or disable the Fast(V.34) setting.

Turn off the Error Correction feature to prevent automatic error correction.

NOTE: Turning off the Error Correction feature can reduce image quality.

Print the Fax Activity Log report from the control panel to determine if the error occurs with a specific fax number.

If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

Device error, press OK

Description

An internal error occurred.

Recommended action

Press the OK button to resume the job.

Document feeder door is open. Canceled fax.

Description

The cover at the top of the document feeder is open, and the product cannot send the fax.

Recommended action

Close the cover, and send the fax again.

Door open

Description

The product front door is open.

Recommended action

Close the door.

Fax is busy. Canceled send.

Description

The fax line to which you were sending a fax was busy. The product has canceled sending the fax.

Recommended action

Call the recipient to ensure that the fax machine is on and ready.

Check that you are dialing the correct fax number.

Check that the Redial if Busy option is enabled.

Open the Service menu, and touch the Fax Service button. Touch the Run Fax Test button. This test verifies that the phone cord is connected to the correct port and that the phone line has a signal. The product prints a report with the results.

If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

Fax is busy. Redial pending.

Description

The fax line to which you were sending a fax was busy. The product automatically redials the busy number.

Recommended action

Allow the product to retry sending the fax.

Call the recipient to ensure that the fax machine is on and ready.

Check that you are dialing the correct fax number.

Open the Service menu, and touch the Fax Service button. Touch the Run Fax Test button. This test verifies that the phone cord is connected to the correct port and that the phone line has a signal. The product prints a report with the results.

If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

Fax receive error.

Description

An error occurred while trying to receive a fax.

Recommended action

Ask the sender to resend the fax.

Try faxing back to the sender or another fax machine.

Check for a dial tone on the phone line by touching the Start Fax button.

Check that the telephone cord is securely connected by unplugging and replugging the cord.

Make sure that you are using the telephone cord that came with the product.

Open the Service menu, and touch the Fax Service button. Touch the Run Fax Test button. This test verifies that the phone cord is connected to the correct port and that the phone line has a signal. The product prints a report with the results.

Decrease the fax speed. Ask the sender to resend the fax.

Turn off error-correction mode. Ask the sender to resend the fax.

NOTE: Turning off error-correction mode can reduce the quality of the fax image.

Connect the product to a different phone line.

If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

Fax Send error.

Description

An error occurred while trying to send a fax.

Recommended action

Try resending the fax.

Try faxing to another fax number.

Check for a dial tone on the phone line by touching the Start Fax button.

Check that the telephone cord is securely connected by unplugging and replugging the cord.

Make sure that you are using the telephone cord that came with the product.

Make sure that the phone is working by disconnecting the product, plugging in a telephone to the phone line, and making a voice call.

Connect the product to a different phone line.

Set the fax resolution to Standard instead of the default of Fine.

If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

Fax storage is full. Canceling the fax receive.

Description

During the fax transmission, the product ran out of memory. Only the pages that fit into memory will be printed.

Recommended action

Print all of the faxes, and then have the sender resend the fax. Have the sender divide the fax job into multiple jobs before resending. Cancel all fax jobs or clear the faxes from memory.

Fax storage is full. Canceling the fax receive.

Description

The amount of available memory for storing faxes is insufficient to store an incoming fax.

Recommended action

If you are using the Private Receive feature, print all received faxes to regain some memory.

If you still need more memory, clear faxes from memory. Open the Service menu. In the Fax Service menu, select the Clear Saved Faxes option.

Fax storage is full. Canceling the fax send.

Description

During the fax job, the memory filled. All pages of the fax have to be in memory for a fax job to work correctly. Only the pages that fit into memory were sent.

Recommended action

Cancel the current job. Turn the product off, and then turn it on again. Try sending the job again.

If the error reoccurs, cancel the job and turn the product off and then on a second time. The product might not have enough memory for some jobs.

Genuine HP supply installed

Description

A genuine HP toner cartridge was installed.

Recommended action

No action necessary.

Incompatible black

Description

You have installed a toner cartridge that is intended for use in a different HP product model. The product might not function correctly with this toner cartridge installed.

Recommended action

Install the correct toner cartridge for this product.

Install black cartridge

Description

The toner cartridge is either not installed or not correctly installed in the product.

Recommended action

Install the toner cartridge.

Invalid driver Press [OK]

Description

You are using an incorrect print driver.

Recommended action

Select the correct print driver.

Jam in Tray 1, Clear jam and then press OK

Description

The product has detected a jam.

Recommended action

Clear the jam from the tray, and then press OK.

If the message persists, contact HP support.

Load Tray 1 <TYPE> <SIZE>, Press OK to use available media

Description

The tray is not configured for the paper type and size that the print job is requesting.

Recommended action

Load the correct paper into Tray 1. Or press the OK button to use the paper currently in the tray.

Load Tray 1, <PLAIN> <SIZE> / Cleaning mode, OK to start

Description

The product is ready to process the cleaning operation.

Recommended action

Load Tray 1 with plain paper in the size indicated, and then press the OK button.

Load tray <X> Press [OK] for available media

Description

The tray is empty.

Recommended action

Load paper into the tray to continue printing. Press the OK button to select a different tray.

Load tray <X> <TYPE> <SIZE>

Description

A tray is configured for the paper type and size that the print job is requesting, but that tray is empty.

Recommended action

Load the correct paper into the tray, or press the OK button to use paper in a different tray.

Manual Duplex Load Tray 1, Press OK

Description

The first side of a manual duplex job has printed, and the page needs to be loaded to process the second side.

Recommended action

Load the page in the indicated tray with the side to be printed face up, and the top of the page away from you and then press the OK button.

Manual feed <SIZE> <TYPE>, Press OK to use available media

Description

The product is set for manual feed mode.

Recommended action

Press the OK button to clear the message *or* load the correct paper into Tray 1.

Memory is low. Press OK.

Description

The product memory is almost full.

Recommended action

Press the OK button to finish the job, or press the Cancel ✕ button to cancel the job.

Break the job into smaller jobs that contain fewer pages.

Misprint, Press OK

Description

Paper has been delayed as it moves through the product.

Recommended action

Press the OK button to clear the message.

To avoid this problem, try the following solutions:

1. Adjust the paper guides in the tray. Make sure the front paper guide is pushing the paper against the back edge of the tray.
2. Use paper that meets HP specifications. Store paper unopened in its original packaging.
3. Use the product in an area that meets the environmental specifications for this product.

No dial tone.

Description

The product could not detect a dial tone.

Recommended action

Check for a dial tone on the phone line by touching the Start Fax button.

Unplug the telephone cord from both the product and the wall and replug the cord.

Make sure that you are using the telephone cord that came with the product.

Unplug the product telephone cord from the wall, connect a telephone, and try making a voice call.

Make sure that the phone cord from the wall telephone jack is plugged into the line port.

Connect the product phone cord into a jack for another phone line.

Check the phone line by using the Run Fax Test option from the Service menu on the control panel.

If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

No fax answer. Canceled send.

Description

Attempts to redial a fax number failed, or the Redial if No Answer option was turned off.

Recommended action

Call the recipient to ensure that the fax machine is on and ready.

Check that you are dialing the correct fax number.

Check that the redial option is enabled.

Unplug the telephone cord from both the product and the wall and replug the cord.

Unplug the product telephone cord from the wall, connect a telephone, and try making a voice call.

Make sure that the phone cord from the wall telephone jack is plugged into the line port.

Connect the product phone cord into a jack for another phone line.

If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

No fax answer. Redial pending.

Description

The receiving fax line did not answer. The product attempts to redial after a few minutes.

Recommended action

Allow the product to retry sending the fax.

Call the recipient to ensure that the fax machine is on and ready.

Check that you are dialing the correct fax number.

If the product continues to redial, unplug the product telephone cord from the wall, connect a telephone, and try making a voice call.

Make sure that the phone cord from the wall telephone jack is plugged into the line port.

Connect the product phone cord into a jack for another phone line.

Try a different phone cord.

If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

No fax detected.

Description

The product answered the incoming call but did not detect that a fax machine was calling.

Recommended action

Allow the product to retry receiving the fax.

Try a different phone cord.

Connect the product phone cord into a jack for another phone line.

If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

Print failure, press OK. If error repeats, turn off then on.

Description

The product cannot process the page.

Recommended action

Press the OK button to continue printing the job, but output might be affected.

If the error persists, turn the power off and then on. Resend the print job.

Rear door open

Description

The product rear door is open.

Recommended action

Close the door.

Remove shipping material from toner cartridge

Description

A toner cartridge shipping lock is installed.

Recommended action

Pull the orange tab to remove the shipping lock from the cartridge.

Replace black cartridge

Description

The toner cartridge is at the end of its useful life, and the product is customer-configured to stop printing when it reaches the very low state.

Recommended action

To ensure optimal print quality, HP recommends replacing the toner cartridge at this point. You can continue printing until you notice a decrease in print quality. Actual cartridge life may vary. Once an HP toner cartridge has reached very low, HP's Premium Protection Warranty on that toner cartridge has ended. All print defects or cartridge failures incurred when an HP toner cartridge is used in Continue at Very Low mode will not be considered to be defects in materials or workmanship in the toner cartridge under the HP Print Cartridge Warranty Statement.

Unexpected size in tray <X> Load <size> Press [OK]

Description

The product has detected paper in the tray that does not match the configuration for the tray.

Recommended action

Load the correct paper into the tray, or configure the tray for the size that you have loaded.

Unsupported black cartridge Press [OK] to continue

Description

The product has detected an installed toner cartridge that was not made by HP.

Recommended action

Press the OK button to continue printing.

If you believe you purchased an HP supply, go to www.hp.com/go/anticounterfeit. Service or repairs that are required as a result of using unsupported supplies are not covered under HP warranty.

Used black cartridge is installed Press [OK] to continue

Description

You are using a toner cartridge that reached the default low threshold while it was installed in a product.

Recommended action

Prining can continue, but consider having a replacement toner cartridge on hand.

Event-log messages

Print the event log

1. Make sure the product is in the ready state.
2. From the Home screen on the product control panel, touch the Setup button.
3. Touch the left arrow button, and then quickly touch the Cancel button.
4. The product returns to the Ready state. touch the Setup button to reopen the menus.
5. Touch the 2ndary Service menu.
6. Touch the Service Reports menu.
7. Touch the Error Report item.

Show an event log

You can use **HP Device Toolbox** to view the event log from a computer.

NOTE: This tool is available only if you performed a full installation when you installed the product.

1. Click the **Start** button, and then click the **Programs** item.
2. Click your HP product group, and then click the **HP Device Toolbox** item.
3. Click the **Home** tab, and then click the **Event Log** item. The event log shows a list of all product events and errors.

Event log messages

The following table contains any event log codes for this product that correspond to a control-panel error message. To resolve these events, consult the control panel error message.

Table 2-5 Event-log messages

Event code	Description
13.0000	Paper jam
20.0000	Memory out
21.0000	Page misfeed or mispick
41.2000	Beam detect malfunction
41.3000	Unexpected size
50.0000	Fuser error
50.1000	Low fuser temperature error
50.3000	High fuser temperature error
50.4000	Fuser drive circuit error

Table 2-5 Event-log messages (continued)

Event code	Description
51.0000	Beam detect or laser error
52.0000	Engine laser scanner error
55.3000	Engine-formatter communication error
55.4000	Engine communication timeout error
57.0000	Fan motor error
57.0600	Fan motor error

Some product events do not produce a message that displays on the control panel. Instead, they are only recorded in the event log.

Table 2-6 Event-log-only messages

Event code	Description	Solution
50.2000	Slow fuser error	
50.7000	Fuser open error	
	Low subthermistor fuser error	
	High subthermistor fuser error	
51.2000	Black scanner laser error (inline devices only)	
54.0100	Environmental sensor error	Verify that the DC controller connectors are firmly connected. If the error persists, replace the temperature/humidity sensor. If the error persists, replace the DC controller.
54.0600	Density sensor error	Verify that the cables between the DC controller is firmly connected. If the error persists, replace the color misregistration sensor. If the error persists, replace the DC controller.
54.1100	Black density out of range	
54.1200	Black density measurement abnormality	
54.1400	Color plane registration sensor error (inline devices only)	1. Turn off the power by using the power switch, and then wait at least 30 seconds. 2. Turn on the power and wait for the product to initialize. If the error persists, verify that the cables between the color misregistration sensor and the DC controller are firmly connected. If the error persists, replace the color misregistration sensor. If the error persists, replace the toner cartridge tray. If the error persists, replace the DC controller.

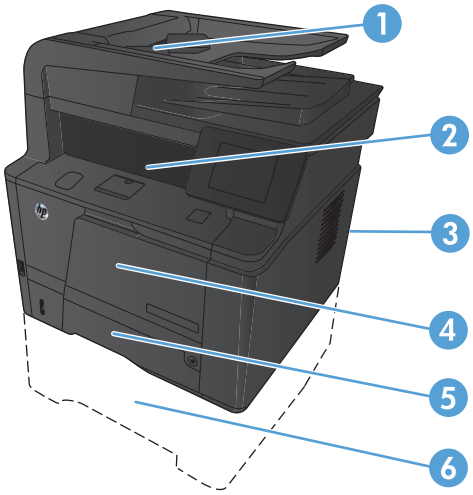
Table 2-6 Event-log-only messages (continued)

Event code	Description	Solution
54.1501	Cyan CPR pattern cannot be read	1. Turn off the power by using the power switch, and then wait at least 30 seconds. 2. Turn on the power and wait for the product to initialize. If the error persists, verify that the cables between the color misregistration sensor and the DC controller are firmly connected. If the error persists, replace the color misregistration sensor. If the error persists, replace the toner cartridge tray. If the error persists, replace the DC controller.
54.1502	Magenta CPR pattern cannot be read	
54.1503	Yellow CPR pattern cannot be read	
54.1599	Black CPR pattern cannot be read	
54.1800	Black toner level sensor error	1. Turn off the power by using the power switch, and then wait at least 30 seconds. 2. Turn on the power and wait for the product to initialize. If the error persists, replace the DC controller.
54.2100	Beam detect (BD) error	If the error persists, replace the DC controller. If the error persists, replace the product.
54.2500	Top-of-page sensor error	Verify that the DC controller connectors are firmly connected. If the error persists, replace the DC controller.

Clear jams

Jam locations

Jams can occur in these locations:

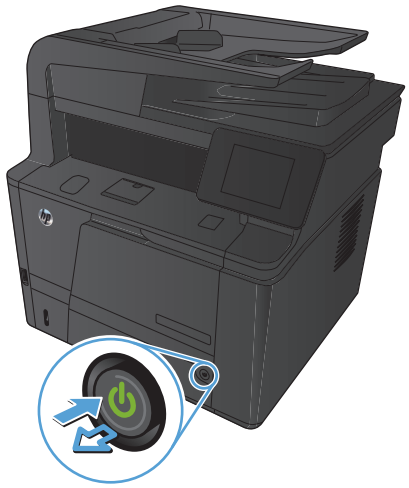


1	Document feeder
2	Output bin
3	Rear door
4	Tray 1
5	Tray 2
6	Optional Tray 3

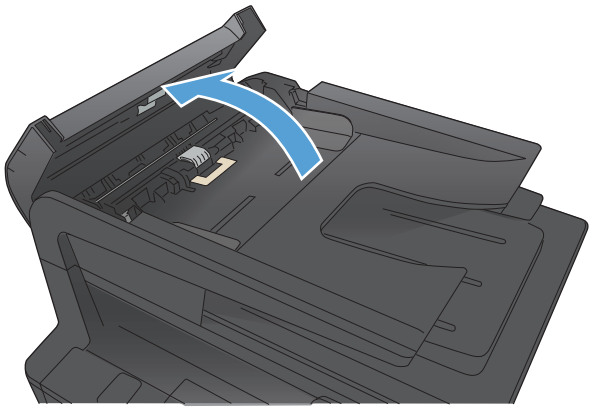
Loose toner might remain in the product after a jam. This problem typically resolves itself after a few sheets have been printed.

Clear jams from the document feeder

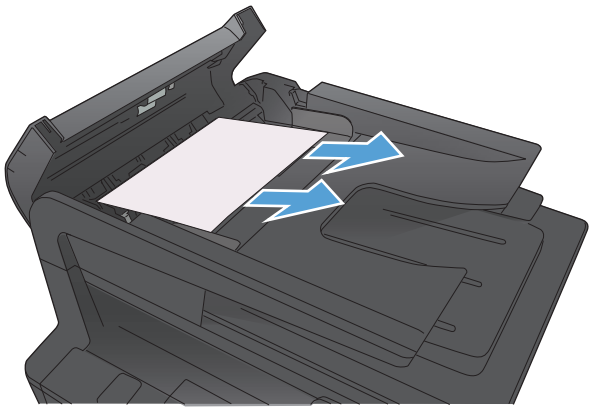
1. Turn the product off.



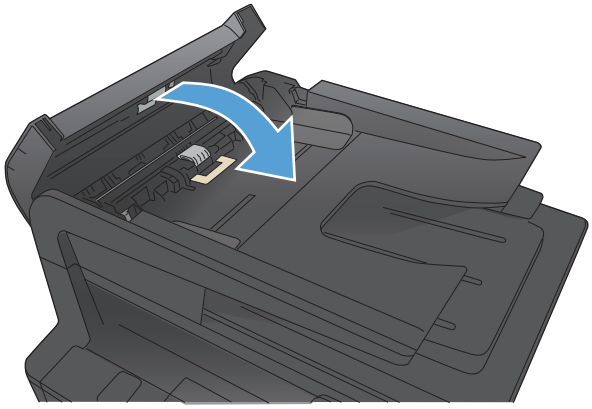
2. Open the document feeder cover.



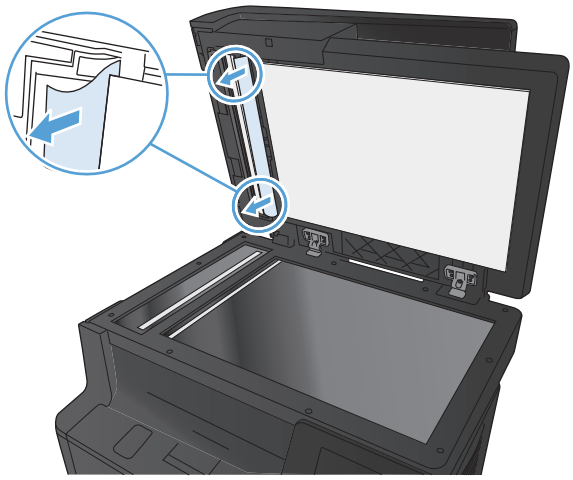
3. Gently pull the jammed paper out.



4. Close the document feeder roller assembly, and then close the document feeder cover.



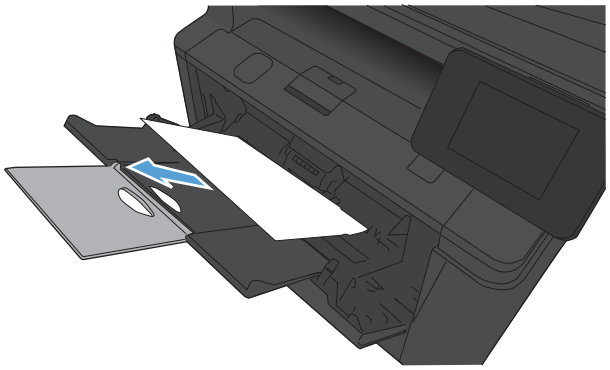
5. Open the scanner lid. If paper is jammed in the scanner lid, gently pull it out.



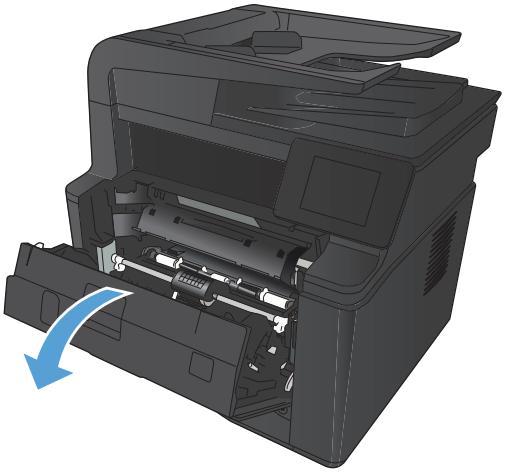
Clear a jam in Tray 1

NOTE: If the sheet tears, remove all fragments before resuming printing.

1. If you can see the jammed sheet, remove the jammed sheet by pulling it straight out.



2. If you cannot see the jammed sheet, open the print cartridge door, and then remove the print cartridge.



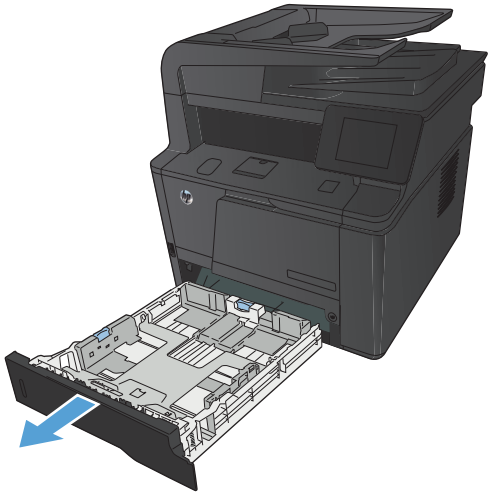
3. Remove the jammed sheet by pulling it straight out.

   CAUTION: Do not pull up on the jammed sheet. Be sure to pull it straight out.

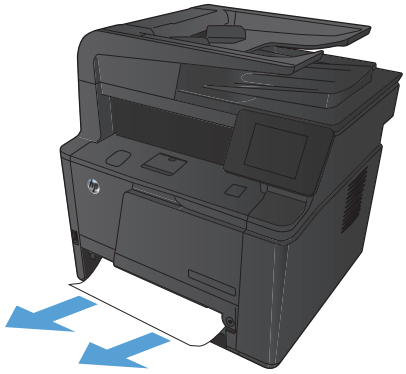
4. Reinstall the print cartridge, and then close the print cartridge door.

Clear a jam in Tray 2

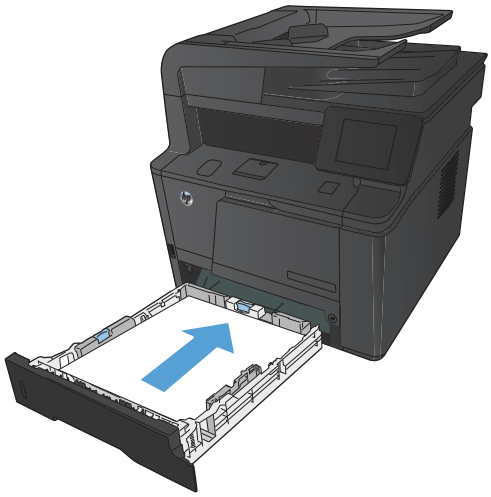
1. Remove the tray from the product.



2. Remove the jammed sheet by pulling it straight out.



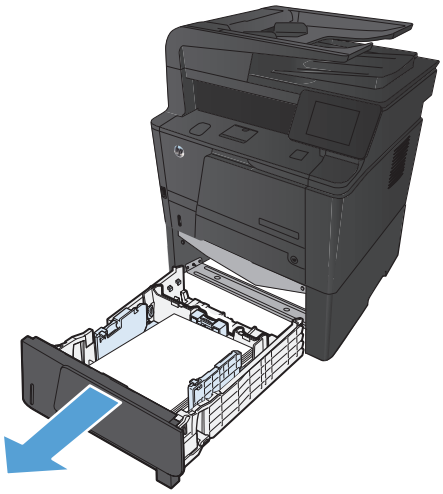
3. Replace the tray.



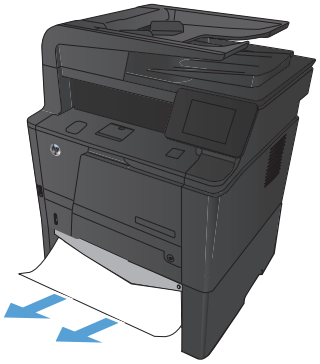
4. Press the OK button to continue printing.

Clear a jam in optional Tray 3

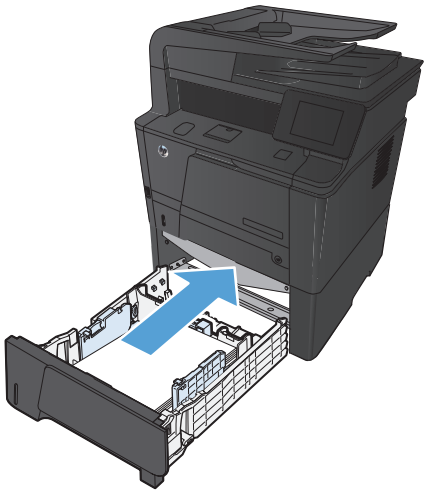
1. Remove the tray from the product.



2. Remove the jammed sheet by pulling it straight out.



3. Replace the tray.

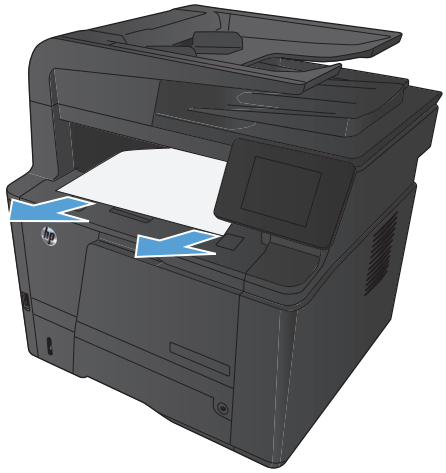


4. Press the OK button to continue printing.

Clear jams from the output bin

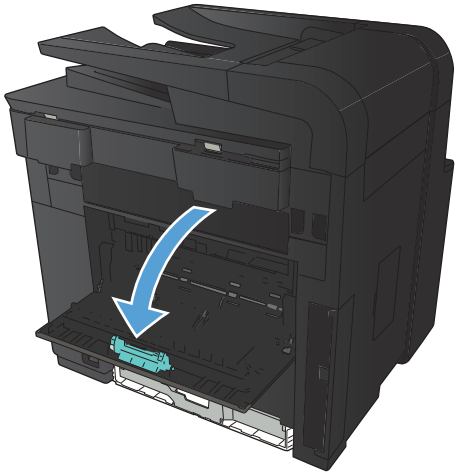
CAUTION: Do not use sharp objects, such as tweezers or needle-nose pliers, to remove jams. Damage caused by sharp objects will not be covered by the warranty.

1. With both hands, grasp the paper, and carefully pull it free from the product.



Clear a jam in the duplexer area

1. Open the rear door.

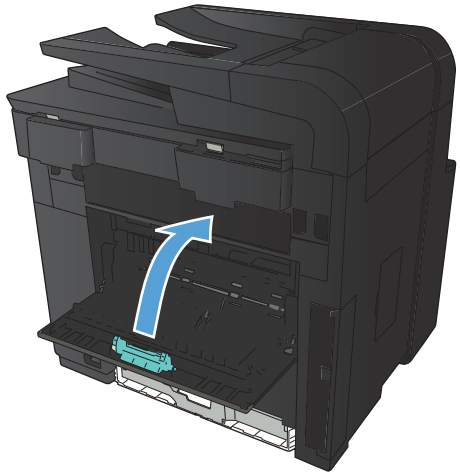


2. Remove any jammed sheets.

   NOTE: If the sheet tears, remove all fragments before resuming printing.

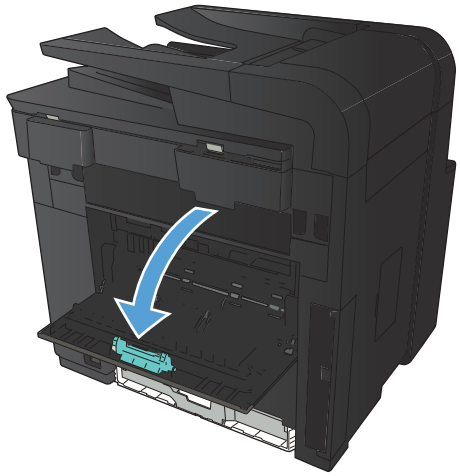
   CAUTION: Wait until the fuser area has cooled before clearing the jam.

3. Close the rear door.



Clear a jam in the fuser area

1. Open the rear door.

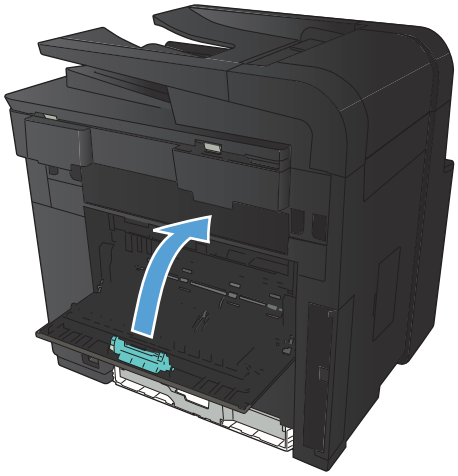


2. Remove any jammed sheets.

   NOTE: If the sheet tears, remove all fragments before resuming printing.

   CAUTION: Wait until the fuser area has cooled before clearing the jam.

3. Close the rear door.



Solve paper-handling problems

The product picks up multiple sheets of paper

If the product picks up multiple sheets of paper from the tray, try these solutions.

1. Remove the stack of paper from the tray and flex it, rotate it 180 degrees, and flip it over. *Do not fan the paper.* Return the stack of paper to the tray.
2. Use only paper that meets HP specifications for this product.
3. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.
5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Align the guides with the paper-size markings in the bottom of the tray.

The product does not pick up paper

If the product does not pick up paper from the tray, try these solutions.

1. Open the product and remove any jammed sheets of paper.
2. Load the tray with the correct size of paper for your job.
3. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Align the guides with the paper-size markings in the bottom of the tray.
4. Check the product control panel to see if the product is waiting for you to acknowledge a prompt to feed the paper manually. Load paper, and continue.

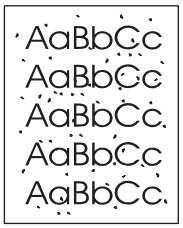
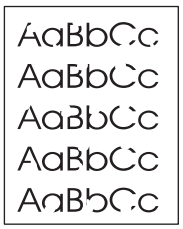
Solve image quality problems

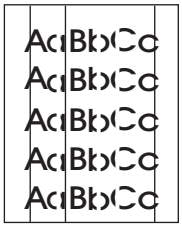
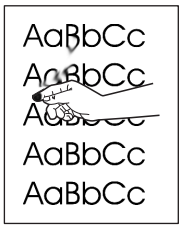
You can prevent most print-quality problems by following these guidelines.

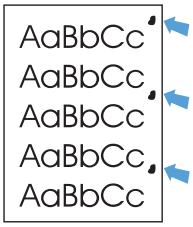
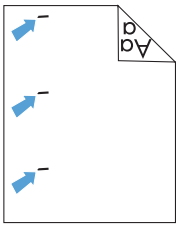
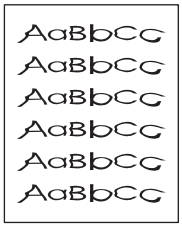
- Print quality examples

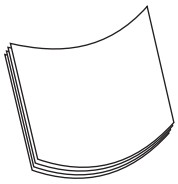
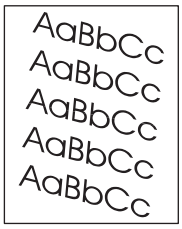
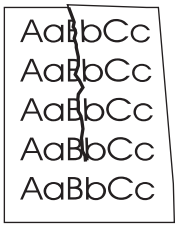
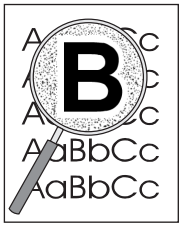
Print quality examples

The following examples depict Letter-size paper that has passed through the product short-edge first. These examples illustrate problems that would affect all the pages that you print, whether you print in color or in black only. The topics that follow list the typical cause and solution for each of these examples.

Problem	Cause	Solution
Print is light or faded. 	The media might not meet HP specifications.	Use media that meets HP specifications.
	The toner cartridge might be defective.	Print the supplies status page to check the remaining toner cartridge life. See the user guide. Replace the toner cartridge.
	The product is set to override the **Replace black cartridge** message and to continue printing.	Replace the toner cartridge.
	The print density setting might have been changed.	Set the print density setting to **0**.
Toner specks appear. 	The media might not meet HP specifications.	Use only media that meets HP specifications. See the complete version of the English service manual.
	The paper path might need cleaning.	Clean the paper path. See Clean the paper path on page 110.
	The toner cartridge might be leaking.	Check the cartridge for leaks.
Dropouts appear. 	A single sheet of print media might be defective.	Try reprinting the job.
	The moisture content of the paper is uneven or the paper has moist spots on its surface.	Try different paper, such as high-quality paper that is intended for laser printers.
	The media is flawed. The media manufacturing processes can cause some areas to reject toner.	Try different paper, such as high-quality paper that is intended for laser printers.

Problem	Cause	Solution
Vertical streaks or bands appear on the page. 	The toner cartridge might be defective.	Print the supplies status page to check the remaining life. See the user guide. Use **HP Device Toolbox**. Replace the toner cartridge.
	The product is set to override the **Replace black cartridge** message and to continue printing.	Replace the toner cartridge.
The amount of background toner shading becomes unacceptable. 	Extremely dry (low humidity) conditions can increase the amount of background shading.	Check the product environment.
	The toner cartridge might be defective.	Replace the toner cartridge.
	The product is set to override the **Replace black cartridge** message and to continue printing.	Replace the toner cartridge.
	Smooth media shows more background than plain media	Try using rougher media.
Toner smears appear on the media. 	The media might not meet HP specifications.	Use only media that meets HP specifications. See the user guide.
	If toner smears appear on the leading edge of the paper, the media guides are dirty, or debris has accumulated in the print path.	Clean the media guides. Clean the paper path. See Clean the paper path on page 110.
The toner smears easily when touched. 	The product is not set to print on the type of media on which you want to print.	In the printer driver, select the **Paper** tab and set **Type is** to match the type of media on which you are printing. Print speed might be slower if you are using heavy paper.
	The media might not meet HP specifications.	Use only media that meets HP specifications. See the user guide.
	The paper path might need cleaning.	Clean the paper path. See Clean the paper path on page 110.

Problem	Cause	Solution
Marks repeatedly appear at even intervals on the printed side of the page. 	The product is not set to print on the type of media on which you want to print.	In the printer driver, select the **Paper** tab and set **Type is** to match the type of paper on which you are printing. Print speed might be slower if you are using heavy paper.
	Internal parts might have toner on them.	The problem typically corrects itself after a few more pages.
	The paper path might need cleaning.	Clean the paper path. See Clean the paper path on page 110.
	The fuser might be damaged or dirty.	To determine if the fuser has a problem, open **HP Device Toolbox**, and print the print-quality diagnostics page. Clean the paper path. See Clean the paper path on page 110.
	The toner cartridge might have a problem.	Replace the toner cartridge.
Marks repeatedly appear at even intervals on the unprinted side of the page. 	Internal parts might have toner on them.	The problem typically corrects itself after a few more pages.
	The paper path might need cleaning.	Clean the paper path. See Clean the paper path on page 110.
	The fuser might be damaged or dirty.	To determine if the fuser has a problem, open **HP Device Toolbox** and print the print-quality diagnostics page. Clean the paper path. See Clean the paper path on page 110.
The printed page contains misformed characters. 	The media might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
	If characters are incorrectly formed so that they produce a wavy effect, the laser scanner might need service.	Verify that the problem also occurs on the configuration page.

Problem	Cause	Solution
The printed page is curled or wavy. 	The product is not set to print on the type of media on which you want to print.	In the printer driver, select the **Paper** tab and set **Type is** to match the type of paper on which you are printing. Print speed might be slower if you are using heavy paper.
	The Service menu item Less Paper Curl is set to Off.	Use the control-panel menus to change the setting. See Service menu on page 121.
	The media might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
	Both high temperature and humidity can cause paper curl.	Check the product environment.
Text or graphics are skewed on the printed page. 	The media might be loaded incorrectly.	Ensure that the paper or other print media is loaded correctly and that the media guides are not too tight or too loose against the stack. See the user guide.
	The media might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
The printed page contains wrinkles or creases. 	The media might be loaded incorrectly.	Verify that the media is loaded correctly and that the media guides are not too tight or too loose against the stack. See the user guide. Turn over the stack of paper in the input tray, or try rotating the paper 180° in the input tray.
	The media might not meet HP specifications.	Use a different paper, such as high-quality paper that is intended for laser printers.
Toner appears around the printed characters. 	The media might be loaded incorrectly.	Turn over the stack of paper in the tray.
	If large amounts of toner have scattered around the characters, the paper might have high resistivity.	Use a different paper, such as high-quality paper that is intended for laser printers.

Problem	Cause	Solution
An image that appears at the top of the page (in solid black) repeats farther down the page (in a gray field). 	Software settings might affect image printing.	In your software program, change the tone (darkness) of the field in which the repeated image appears. In your software program, rotate the whole page 180° to print the lighter image first.
	The order of images printed might affect printing.	Change the order in which the images are printed. For example, have the lighter image at the top of the page, and the darker image farther down the page.
	A power surge might have affected the product.	If the defect occurs later in a print job, turn the product off for 10 minutes, and then turn on the product to restart the print job.
		Use non-glossy media to help reduce the severity of the defect

Clean the product

Clean the pickup and separation rollers

1. Turn off the product, unplug the power cable from the product, and then remove the rollers.
2. Dab a lint-free cloth in isopropyl alcohol, and then scrub the roller.

WARNING! Alcohol is flammable. Keep the alcohol and cloth away from an open flame. Before you close the product and connect the power cable, allow the alcohol to dry completely.

NOTE: In certain areas of California (USA), air pollution control regulations restrict the use of liquid isopropyl alcohol (IPA) as a cleaning agent. In those areas of California, please disregard the previous recommendations and use a dry, lint free cloth, moistened with water, to clean the pickup roller.

3. Use a dry, lint free cloth, to wipe the rollers and remove loose dirt.

Clean the paper path

During the printing process, paper, toner, and dust particles can accumulate inside the product. Over time, this buildup can cause print-quality problems such as toner specks or smearing. This product has a cleaning mode that can correct and prevent these types of problems.

1. From the Home screen on the product control panel, touch the Setup button.
2. Touch the Service menu.
3. Touch the Cleaning Page button.
4. Load plain letter or A4 paper when you are prompted.
5. Touch the OK button to begin the cleaning process.

   Wait until the process is complete. Discard the page that prints.

Clean the scanner glass strip and platen

Over time, specks of debris might collect on the scanner glass and white plastic backing, which can affect performance. Use the following procedure to clean the scanner glass and white plastic backing.

1. Use the power switch to turn off the product, and then unplug the power cable from the electrical socket.
2. Open the scanner lid.

3. Clean the scanner glass and the white plastic backing with a soft cloth or sponge that has been moistened with nonabrasive glass cleaner.

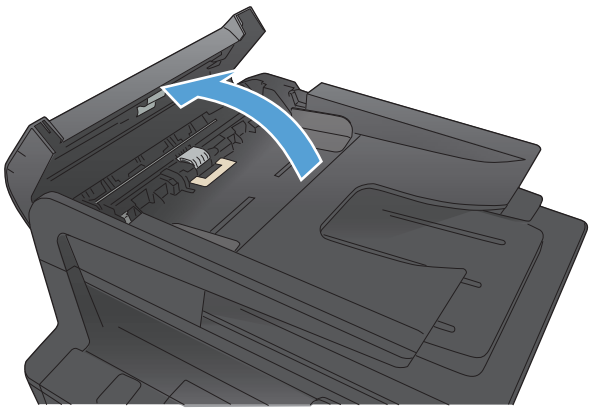
⚠ **CAUTION:** Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the product; these can damage the product. Do not place liquids directly on the glass or platen. They might seep and damage the product.

4. Dry the glass and white plastic backing with a chamois or a cellulose sponge to prevent spotting.
5. Connect the product, and then use the power switch to turn on the product.

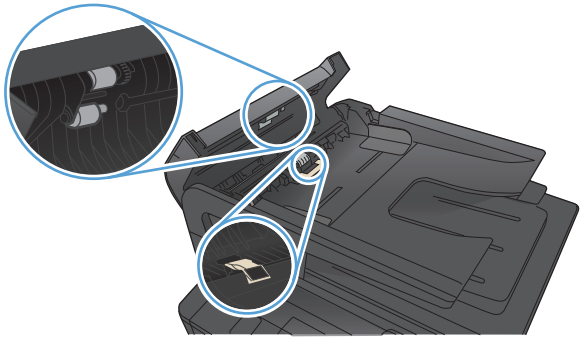
Clean the document feeder pickup rollers and separation pad

If the product document feeder experiences paper-handling problems, such as jams or multiple-page feeds, clean the document feeder rollers and separation pad.

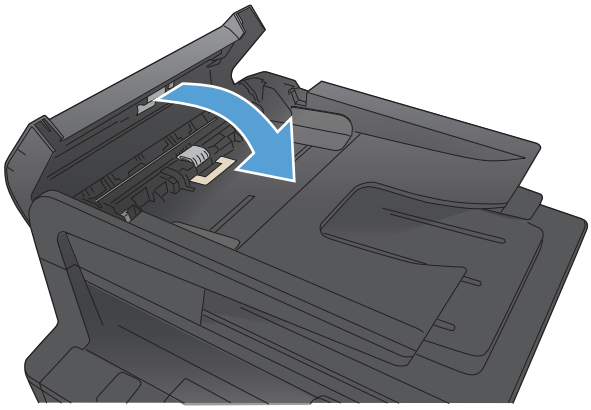
1. Open the document feeder cover.



2. Use a moist, lint-free cloth to wipe both pickup rollers and the separation pad to remove dirt.



3. Close the document feeder cover.



Clean the touchscreen

Clean the touchscreen whenever it is necessary to remove fingerprints or dust. Wipe the touchscreen gently with a clean, water-dampened, lint-free cloth.

⚠ **CAUTION:** Use water only. Solvents or cleaners can damage the touch screen. Do not pour or spray water directly onto the touchscreen.

Solve performance problems

Factors affecting print performance

Problem	Cause	Solution
Pages print but, are totally blank.	The sealing tape might still be in the toner cartridges.	Verify that the sealing tape has been completely removed from the toner cartridges.
	The document might contain blank pages.	Check the document that you are printing to see if content appears on all of the pages.
	The product might be malfunctioning.	To check the product, print a Configuration page.
Pages print very slowly. **NOTE:** The product print speed is effected by various factors (for example, media size or page complexity).	Heavier media types can slow the print job.	Print on a different type of media.
	Complex pages can print slowly.	Proper fusing might require a slower print speed to ensure the best print quality.
	Paper type not set correctly.	Select the type to match the paper.
Pages did not print.	The product might not be pulling media correctly.	Ensure paper is loaded in the tray correctly. If the problem persists, you might need to replace the pickup rollers and the separation pad.
	The media is jamming in the product.	Clear the jam.
	The USB cable might be defective or incorrectly connected.	• Disconnect the USB cable at both ends and reconnect it. • Try printing a job that has printed in the past. • Try using a different USB cable.
	Other devices are running on your computer.	The product might not share a USB port. If you have an external hard drive or network switchbox that is connected to the same port as the product, the other device might be interfering. To connect and use the product, you must disconnect the other device or you must use two USB ports on the computer.

Print speeds

Print speed is the number of pages that print in one minute. Print speed depends on different engine-process speeds or operational pauses between printed pages during normal product operation. Factors that determine the print speed of the product include the following:

- Page formatting time

  The product must pause for each page to be formatted before it prints. Complex pages take more time to format, resulting in reduced print speed. However, most jobs print at full engine speed (35 ppm on Letter-size media or 33 ppm on A4-size media).

- Media size

  Legal-size media reduces print speed because it is longer than the standard Letter- or A4–size media. A reduce print speed is used when printing on narrow media to prevent the edges of the fuser from overheating.

- Media mode

  Some media types require a reduced print speed to achieve maximum print quality on that media. For example, glossy, heavy, and specialty media (for example, envelopes or photos) require a reduced print speed. To maximize the print speed for special media types, ensure that you select the correct media type in the print driver.

- Product temperature

  To prevent product damage, print speed is reduced if the product reaches a specific internal temperature (thermal slow down). The starting temperature of the product, ambient environment temperature, and the print job size effect the number of pages that can be printed before the product reduces the print speed. Thermal slow down reduces print speed by printing four pages and then pausing for an amount of time before printing continues.

- Other print speed reduction factors

  Other factors (especially during large print jobs) that can cause reduced print speeds include:

  - Density control sequence; occurs every 150 pages and takes about 120 seconds.

The product does not print or it prints slowly

The product does not print

If the product does not print at all, try the following solutions.

1. Make sure the product is turned on and that the control panel indicates it is ready.
   - If the control panel does not indicate the product is ready, turn the product off and then on again.
   - If the control panel indicates the product is ready, try sending the job again.
2. If the control panel indicates the product has an error, resolve the error and then try sending the job again.

3. Make sure the cables are all connected correctly. If the product is connected to a network, check the following items:
    - Check the light next to the network connection on the product. If the network is active, the light is green.
    - Make sure that you are using a network cable and not a phone cord to connect to the network.
    - Make sure the network router, hub, or switch is turned on and that it is working correctly.
4. Install the HP software from the CD that came with the product. Using generic printer drivers can cause delays clearing jobs from the print queue.
5. From the list of printers on your computer, right-click the name of this product, click **Properties**, and open the **Ports** tab.
    - If you are using a network cable to connect to the network, make sure the printer name listed on the **Ports** tab matches the product name on the product configuration page.
    - If you are using a USB cable and are connecting to a wireless network, make sure the box is checked next to **Virtual printer port for USB**.
6. If you are using a personal firewall system on the computer, it might be blocking communication with the product. Try temporarily disabling the firewall to see if it is the source of the problem.
7. If your computer or the product is connected to a wireless network, low signal quality or interference might be delaying print jobs.

The product prints slowly

If the product prints, but it seems slow, try the following solutions.

1. Make sure the computer meets the minimum specifications for this product. For a list of specifications, go to this Web site: www.hp.com/support/ljm425series.
2. When you configure the product to print on some paper types, such as heavy paper, the product prints more slowly so it can correctly fuse the toner to the paper. If the paper type setting is not correct for the type of paper you are using, change the setting to the correct paper type.
3. If your computer or the product is connected to a wireless network, low signal quality or interference might be delaying print jobs.

Solve connectivity problems

Solve direct-connect problems

If you have connected the product directly to a computer, check the cable.

- Verify that the cable is connected to the computer and to the product.
- Verify that the cable is not longer than 5 m (16.4 ft). Try using a shorter cable.
- Verify that the cable is working correctly by connecting it to another product. Replace the cable if necessary.

Solve network problems

Check the following items to verify that the product is communicating with the network. Before beginning, print a configuration page from the product control panel and locate the product IP address that is listed on this page.

- Poor physical connection
- The computer is using the incorrect IP address for the product
- The computer is unable to communicate with the product
- The product is using incorrect link and duplex settings for the network
- New software programs might be causing compatibility problems
- The computer or workstation might be set up incorrectly
- The product is disabled, or other network settings are incorrect

Poor physical connection

1. Verify that the product is attached to the correct network port using a cable of the correct length.
2. Verify that cable connections are secure.
3. Look at the network port connection on the back of the product, and verify that the amber activity light and the green link-status light are lit.
4. If the problem continues, try a different cable or port on the hub.

The computer is using the incorrect IP address for the product

1. Open the printer properties and click the **Ports** tab. Verify that the current IP address for the product is selected. The product IP address is listed on the product configuration page.
2. If you installed the product using the HP standard TCP/IP port, select the box labeled **Always print to this printer, even if its IP address changes.**

3. If you installed the product using a Microsoft standard TCP/IP port, use the hostname instead of the IP address.
4. If the IP address is correct, delete the port, and then create a new one.
5. If the error persists, delete the product and then add it again.

The computer is unable to communicate with the product

1. Test network communication by pinging the network.
   a. Open a command-line prompt on your computer. For Windows, click **Start**, click **Run**, and then type `cmd`.
   b. Type `ping` followed by the IP address for your product.
   c. If the window displays round-trip times, the network is working.
2. If the ping command failed, verify that the network hubs are on, and then verify that the network settings, the product, and the computer are all configured for the same network.

The product is using incorrect link and duplex settings for the network

Hewlett-Packard recommends leaving this setting in automatic mode (the default setting). If you change these settings, you must also change them for your network.

New software programs might be causing compatibility problems

Verify that any new software programs are correctly installed and that they use the correct printer driver.

The computer or workstation might be set up incorrectly

1. Check the network drivers, printer drivers, and the network redirection.
2. Verify that the operating system is configured correctly.

The product is disabled, or other network settings are incorrect

1. Review the configuration page to check the status of the network protocol. Enable it if necessary.
2. Reconfigure the network settings if necessary.

Solve wireless network problems

- Wireless connectivity checklist
- The control panel displays the message: The wireless feature on this product has been turned off
- The product does not print after the wireless configuration completes
- The product does not print, and the computer has a third-party firewall installed
- The wireless connection does not work after moving the wireless router or product
- Cannot connect more computers to the wireless product
- The wireless product loses communication when connected to a VPN
- The network does not appear in the wireless networks list
- The wireless network is not functioning

Wireless connectivity checklist

- The product and the wireless router are turned on and have power. Also make sure the wireless radio in the product is turned on.
- The service set identifier (SSID) is correct. Print a configuration page to determine the SSID. If you are not sure the SSID is correct, run the wireless setup again.
- With secured networks, make sure the security information is correct. If the security information is incorrect, run the wireless setup again.
- If the wireless network is working correctly, try accessing other computers on the wireless network. If the network has Internet access, try connecting to the Internet over a wireless connection.
- The encryption method (AES or TKIP) is the same for the product as it is for the wireless access point (on networks using WPA security).
- The product is within the range of the wireless network. For most networks, the product must be within 30 m (100 ft) of the wireless access point (wireless router).
- Obstacles do not block the wireless signal. Remove any large metal objects between the access point and the product. Make sure poles, walls, or support columns containing metal or concrete do not separate the product and wireless access point.
- The product is located away from electronic devices that might interfere with the wireless signal. Many devices can interfere with the wireless signal including motors, cordless phones, security system cameras, other wireless networks, and some Bluetooth devices.
- The printer driver is installed on the computer.
- You have selected the correct printer port.
- The computer and product connect to the same wireless network.

The control panel displays the message: The wireless feature on this product has been turned off

- Press the wireless button on the product to open the Wireless menu, and then turn the wireless radio on.

The product does not print after the wireless configuration completes

1. Make sure the product is turned on and in the ready state.
2. Make sure you are connecting to the correct wireless network.
3. Make sure that the wireless network is working correctly.
   a. Open the Network Setup menu, and then open the Wireless Menu item.
   b. Select the Run Network Test item to test the wireless network. The product prints a report with the results.
4. Make sure that your computer is working correctly. If necessary, restart your computer.

The product does not print, and the computer has a third-party firewall installed

1. Update the firewall with the most recent update available from the manufacturer.
2. If programs request firewall access when you install the product or try to print, make sure you allow the programs to run.
3. Temporarily turn off the firewall, and then install the wireless product on the computer. Enable the firewall when you have completed the wireless installation.

The wireless connection does not work after moving the wireless router or product

Make sure that the router or product connects to the same network that your computer connects to.

1. Open the Reports menu, and select the Configuration Report item to print the report.
2. Compare the service set identifier (SSID) on the configuration report to the SSID in the printer configuration for your computer.
3. If the SSIDs are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for your product.

Cannot connect more computers to the wireless product

1. Make sure that the other computers are within the wireless range and that no obstacles block the signal. For most networks, the wireless range is within 30 m (100 ft) of the wireless access point.
2. Make sure the product is turned on and in the ready state.
3. Turn off any third-party firewalls on your computer.

4. Make sure that the wireless network is working correctly.

    a. On the product control panel, and then open the Wireless Menu item.

    b. Select the Run Network Test item to test the wireless network. The product prints a report with the results.

5. Make sure that your computer is working correctly. If necessary, restart your computer.

6. If the product is in Wireless Direct mode, make sure that the computer connection is pointing to the correct IP address. In Wireless Direct mode, the product has two IP addresses: one assigned by the router, and the other set by the Wireless Direct function. Use the printer address to connect other computers.

The wireless product loses communication when connected to a VPN

- Typically, you cannot connect to a VPN and other networks at the same time.

The network does not appear in the wireless networks list

- Make sure the wireless router is turned on and has power.
- The network might be hidden. However, you can still connect to a hidden network. You need to know the network name and the network security settings.

The wireless network is not functioning

1. Verify that the network is communicating. Find the product IP address on the configuration page, and then open a Web browser and enter the IP address to see if the HP Embedded Web Server will open.

2. Test network communication by pinging the network.

    a. Open a command-line prompt on your computer. For Windows, click **Start**, click **Run**, and then type `cmd`.

    b. Type `ping` followed by the service set identifier (SSID) for your network.

    c. If the window displays round-trip times, the network is working.

3. Make sure that the router or product connects to the same network that your computer connects to.

    a. Open the Reports menu, and select the Configuration Report item to print the report.

    b. Compare the service set identifier (SSID) on the configuration report to the SSID in the printer configuration for your computer.

    c. If the SSIDs are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for your product.

Service mode functions

Service menu

Use the control-panel Service menu to troubleshoot product problems.

Service menu settings

The Service menu is used to adjust print settings, restore factory default settings, and clean the print paper path.

The following Service menu items are available:

- Fax Service—used to configure the product fax functionality.
- Cleaning Page—used to remove dust and toner from the print paper path.
- USB Speed—used to set the USB speed to high or full.
- Less Paper Curl—used to put the product into a mode that reduces paper curl.
- Archive Print—used to put the product into a mode that produces output less susceptible to toner smearing and dusting for preservation and archival.
- Firmware Date—used to display the product's firmware date code.
- Restore Defaults—used to reset all customer-accessible menu settings back to the factory default settings (except language) via the control panel or software.

  NOTE: This Service menu item does not reset factory-settable settings, including formatter number, page counts, factory paper settings, language, and so on.

- Signature Check—used to configure how the product proceeds when a firmware upgrade file does not have a valid signature.
- HP Smart Install—used to enable or disable the HP Smart Install functionality.
- LaserJet Update—used to manually update the firmware or to set up automatic firmware updates.

Restore the factory-set defaults

1. From the Home screen on the product control panel, touch the Setup button.
2. Scroll to and touch the Service menu.
3. Scroll to and touch the Restore Defaults button, and then touch the OK button.

   The product automatically restarts.

Secondary service menu

Use the secondary service menu to print service-related reports and to run special tests. Customers do not have access to this menu.

Open the secondary service menu

1. Make sure the product is in the Ready state.
2. From the Home screen on the product control panel, touch the Setup button.
3. Touch the left arrow button, and then quickly touch the Cancel button.
4. The product returns to the Ready state. touch the Setup button to reopen the menus.
5. Touch the 2ndary Service menu.
6. Use the scrollbar to navigate the 2ndary Service menu.

Secondary service menu structure

Table 2-7 Secondary Service menu

Menu item	Sub-menu item	Description
Service Reports	Cont Self Test	Print a continuous configuration page.
	Error Report	Print an error report.
Location	A list of available locations appears	This item sets certain product parameters that are dependent on the location, such as the default paper size and the symbol set. Scroll to the appropriate location and select Yes to set the location. The product automatically restarts after you change the location.
Line Frequency		This item allows the refresh rate of the touchscreen control panel to be changed between 50 and 60 Hz.
Display Test		Use this test to verify that the LEDs and characters on the control-panel display function correctly. At the beginning of the test, each of the LEDs is turned on one-at-time. Press the OK button to continue to the next LED. After the LED test is complete, the character test begins by testing the pixels on each line. Then, each of the 255 characters is displayed in groups of 16. Press the OK button to continue to the next group of 16 characters. You can cancel the test at any time by pressing the Cancel .
Button Test		Use this test to verify that the control-panel buttons function correctly. The display prompts you to press each button.
Calibrate Touch Screen		Use this item to adjust the touchscreen control panel.
CP FW Version		This item shows the current date codFe of the firmware.
802.11n		(Wireless models only.) Enable or disable the wireless 802.11n functionality.
LED Test		This item allows the testing of the different LED Displays
NAND Reset		This item allows the NAND to be reset.

Table 2-7 Secondary Service menu (continued)

Menu item	Sub-menu item	Description
eDuplex Calibration		This item allows two pieces of white paper to be loaded in the document feeder.
PPX Ring		Use this item to toggle between On and Off.

Product resets

NVRAM initialization

⚠ **CAUTION:** All HP Jetdirect settings are also reset. Be sure to print a configuration page before performing an NVRAM initialization. Make note of the IP address that is listed on the Jetdirect configuration page. You need to restore the IP address after performing an NVRAM initialization.

An NVRAM initialization erases all data stored in the unprotected NVRAM sections. Performing an NVRAM initialization resets the following settings and information:

- All menu settings are reset to factory default values.
- All localization settings, including language and country/region, are reset.

After performing an NVRAM initialization, reconfigure any computers that print to this product so that the computers can recognize the product.

1. Turn the product off.
2. **Touchscreen control panel models**: Press and hold the lower right quadrant of the touchscreen. Keep the quadrant depressed as you turn the product on.
3. When the **Permanent Storage Init.** message appears on the display, release the buttons.
4. When the product has finished the NVRAM initialization, it returns to the Ready state.

Super NVRAM initialization

A super NVRAM initialization restores the product to the "generic product mode" in which it arrived from the factory. This means that you will have to reset the language and country/region settings when the product starts after the initialization. A super NVRAM initialization erases all data stored in the protected and unprotected NVRAM sections.

1. Turn the product off.
2. Press and hold the lower left quadrant of the touchscreen. Keep the quadrant depressed as you turn the product on.
3. When the **Permanent Storage Init.** message appears on the display, release the buttons.
4. When the super NVRAM initialization has been completed, the product enters the generic product mode.

Solve fax problems

Fax troubleshooting checklist

- Several possible fixes are available. After each recommended action, retry faxing to see if the problem is resolved.
- For best results during fax problem solving, make sure the line from the product is plugged directly into the wall phone port. Disconnect all other devices that are connected to the product.

1. Verify that the telephone cord is plugged into the correct port on the back of the product.
2. Check the phone line by using the fax test:
   a. From the Home screen on the product control panel, touch the Setup button, and then open the Service menu.
   b. Select the Fax Service option.
   c. Select the Run Fax Test option. The product prints a fax test report.

      The report contains the following possible results:

      - **Pass**: The report contains all of the current fax settings for review.
      - **Fail**: The cord is in the wrong port. The report contains suggestions for how to resolve the issue.
      - **Fail** : The phone line is not active. The report contains suggestions for how to resolve the issue.
3. Verify that the product firmware is current:
   a. Print a configuration page from the control panel Reports menu to obtain the current firmware date code.
   b. Go to www.hp.com.
      1. Click the **Support & Drivers** link.
      2. Click the **Download drivers and software (and firmware)** link option.
      3. In the **For product** box, type the product model number, and then click the **Go** button.

4. Click the link for your operating system.
5. Scroll to the Firmware section of the table.
    - If the listed version matches the version on the configuration page, you have the most current version.
    - If the versions are different, download the firmware upgrade and update the firmware on the product following the instructions onscreen.

      NOTE: The product must be connected to a computer with internet access to upgrade firmware.

    - Resend the fax.

4. Verify that the fax was set up when the product software was installed.

   From the computer, in the HP program folder, run the Fax Setup Utility.

5. Verify that the telephone service supports analog fax.

   - If using ISDN or digital PBX, contact your service provider for information about configuring to an analog fax line.
   - If using a VoIP service, change the Fax Speed setting to Slow(V.29) or disable Fast(V.34) from the control panel. Ask if your service provider supports fax and for the recommended fax modem speed. Some companies might require an adapter.
   - If using a DSL service, ensure that a filter is included on the phone line connection to the product. Contact the DSL service provider or purchase a DSL filter if you do not have one. If a DSL filter is installed, try another because these filters can be defective.

6. If the error persists, find more detailed problem-solving solutions in the sections that follow this one.

Solve problems receiving faxes

- The fax does not respond
- An error message displays on the control panel
- A fax is received but does not print
- Sender receives a busy signal
- No dial tone
- Fax cuts off or prints on two pages

The fax does not respond

The fax has a dedicated phone line

- Set the Answer Mode option to the Automatic setting from the control panel.
  1. Touch the Setup button.
  2. Open the Fax Setup menu.
  3. Open the Basic Setup menu.
  4. Open the Answer Mode menu.
  5. Select the Automatic setting.

An answering machine is connected to the product

- Set the Answer Mode option to the TAM setting and plug the answering machine into the "telephone" port.
  1. Touch the Setup button.
  2. Open the Fax Setup menu.
  3. Open the Basic Setup menu.
  4. Open the Answer Mode menu.
  5. Select the TAM setting.

  If the TAM setting is unavailable, set the Answer Mode option to the Automatic setting.
- Set the Rings to Answer setting to at least one ring more than the number of rings for which the answering machine is set.
  1. Touch the Setup button.
  2. Open the Fax Setup menu.
  3. Open the Basic Setup menu.

d. Open the Rings to Answer menu.

e. Select the correct setting.

- Connect the answering machine into the “telephone” port.
- If the product has a telephone handset connected, set the Answer Mode option to the Fax/Tel setting to route calls to the correct device. When detecting a voice call, the product generates a ring tone that alerts you to pick up the telephone handset.

  a. Touch the Setup button.

  b. Open the Fax Setup menu.

  c. Open the Basic Setup menu.

  d. Open the Answer Mode menu.

  e. Select the Fax/Tel setting.

A telephone handset is connected to the product

Set the Answer Mode option to the Automatic setting.

1. Touch the Setup button.
2. Open the Fax Setup menu.
3. Open the Basic Setup menu.
4. Open the Answer Mode menu.
5. Select the Automatic setting.

The Answer Mode setting is set to the Manual setting

- Touch the Start Fax button on the control panel.

Voice mail is available on the fax line

- Add a distinctive ring service to your telephone line and change the Distinctive Ring setting on the product to match the ring pattern supplied by the telephone company. Contact your telephone company for information.

  a. Verify that the answer mode is set to the Automatic setting.

  b. Touch the Setup button.

  c. Open the Fax Setup menu.

  d. Open the Basic Setup menu.

e. Open the Distinctive Ring menu.

f. Select the correct setting.

- Buy a dedicated line for faxing.
- Set the Answer Mode option to the Manual setting.

a. Touch the Setup button.

b. Open the Fax Setup menu.

c. Open the Basic Setup menu.

d. Open the Answer Mode menu.

e. Select the Manual setting.

NOTE: You must be present to receive faxes.

The product is connected to a DSL phone service

- Check the installation and features. A DSL modem requires a high-pass filter on the phone line connection to the product. Contact your DSL service provider for a filter or buy a filter.
- Verify that the filter is plugged in.
- Replace the existing filter to make sure that it is not defective.

The product uses a fax over IP or VoIP phone service

- Set the Fax Speed option to the Slow(V.29) or Medium(V.17) setting, or disable the Fast(V.34) setting.

a. Touch the Setup button.

b. Open the Fax Setup menu.

c. Open the Advanced Setup menu.

d. Open the Fax Speed menu.

e. Select the correct setting.

- Contact your service provider to make sure that fax is supported and for a recommended fax speed settings. Some companies might require an adapter.

An error message displays on the control panel

The No fax detected. message displays

NOTE: This error does not always refer to a missed fax. If a voice call is made to a fax number by mistake and the caller hangs up, the **No fax detected.** message displays on the control panel.

- Ask the sender to resend the fax.
- Make sure that the telephone cord from the product is plugged into the wall telephone jack.
- Try a different phone cord.
- Connect the product phone cord into a jack for another phone line.
- Make sure the telephone line and phone wall jack are active by plugging in a telephone and checking for a dial tone.
- Make sure that the telephone cord is plugged into the "line" port on the product.
- Check the phone line by running a fax test from the control panel.
- If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

The Communication error. message displays

- Ask the sender to send the fax again or send at a later time when line conditions have improved.
- Unplug the product telephone cord from the wall, connect a telephone, and try making a call. Connect the product phone cord into a jack for another phone line.
- Try a different phone cord.
- Set the Fax Speed option to the Slow(V.29) or Medium(V.17) setting, or disable the Fast(V.34) setting.

  a. Touch the Setup button.

  b. Open the Fax Setup menu.

  c. Open the Advanced Setup menu.

  d. Open the Fax Speed menu.

  e. Select the correct setting.
- Turn off the Error Correction feature to prevent automatic error correction.

  NOTE: Turning off the Error Correction feature can reduce image quality.

  a. Touch the Setup button.

  b. Open the Service menu.

  c. Open the Fax Service menu.

d. Open the Error Correction menu.

e. Select the Off setting.

- Print the Fax Activity Log report from the control panel to determine if the error occurs with a specific fax number.

  a. Touch the Fax button, and then touch the Fax Menu button.

  b. Open the Fax Reports menu.

  c. Open the Fax Activity Log menu.

  d. Select the Print Log Now option.

- If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

The Fax storage is full. message displays

- Turn the product off then on.
- Print all of the faxes, and then have the sender resend the fax.
- Ask the sender to divide a large fax job into smaller sections, and then fax them individually.
- Make sure that the resolution of the sending fax machine is not set to the Photo setting or the Superfine setting.

  a. Touch the Setup button.

  b. Open the Fax Setup menu.

  c. Open the Advanced Setup menu.

  d. Open the Fax Resolution menu.

  e. Select the correct setting.

- Cancel all fax jobs or clear the faxes from memory.

The Fax is busy. message displays

- The product cannot receive a fax while attempting to send one. Cancel the fax send and try sending at a later time.
- Allow the product to try sending the fax again.

A fax is received but does not print

The Private Receive feature is on

- When the Private Receive feature is activated, received faxes are stored in memory. A password is required to print the stored faxes.
- Enter the password to print the fax. If you do not know the password, contact the product administrator.

NOTE: Memory errors might occur if the faxes are not printed. The product will not answer if the memory is full.

Sender receives a busy signal

A handset is connected to the product

- Make sure the phone is hung up.
- Change the Answer Mode option to match the product setup.
  1. Touch the Setup button.
  2. Open the Fax Setup menu.
  3. Open the Basic Setup menu.
  4. Open the Answer Mode menu.
  5. Select the setting that matches the product setup.

     Set the Answer Mode option to the Fax/Tel setting to automatically receive faxes. The Fax/Tel setting automatically detects whether the incoming transmission is a fax or a voice call and routes the call to the appropriate device.

A phone line splitter is being used

- If you are using a phone line splitter, remove the splitter and set up the phone as a downstream phone.
- Make sure the phone is hung up.
- Make sure the phone is not being used for a voice call when faxing.

No dial tone

- If using a phone line splitter, remove the phone line splitter and set up the phone as a downstream phone.

Fax cuts off or prints on two pages

- Set the Default Paper Size setting. Faxes print on a single size of paper based on the Default Paper Size settings.
  a. Open the Setup Menu menu.
  b. Open the System Setup menu.
  c. Open the Paper Setup menu.
  d. Open the Default Paper Size menu.
  e. Select the correct setting.
- Set the paper type and size for the tray used for faxes.
- Turn on the Fit to Page setting to print longer length faxes on letter or A4 size paper.
  a. Open the Setup Menu menu.
  b. Open the Fax Setup menu.
  c. Open the Advanced Setup menu.
  d. Open the Fit to Page menu.
  e. Select the On setting.

NOTE: If the Fit to Page setting is off and the Default Paper Size setting is set to letter, a legal size original prints on two pages.

Solve problems sending faxes

- An error message displays on the control panel
- The control panel displays a Ready message with no attempt to send the fax
- The control panel displays the message "Storing page 1" and does not progress beyond that message
- Faxes can be received, but not sent
- Unable to use fax functions from the control panel
- Unable to use speed dials
- Unable to use group dials
- Receive a recorded error message from the phone company when trying to send a fax
- Unable to send a fax when a phone is connected to the product

An error message displays on the control panel

The Communication error. message displays

- Allow the product to retry sending the fax. Re-sending temporarily reduces the fax speed.
- Unplug the product telephone cord from the wall, connect a telephone, and try making a call. Connect the product phone cord into a jack for another phone line.

  If the product is connected to a digital phone line, verify that you are using the correct filter and settings provided by the digital service provider.
- Try a different phone cord.
- From the control panel, change the Fax Speed option to the Medium(V.17) setting or Slow(V.29) setting.

  a. Touch the Setup button.

  b. Open the Fax Setup menu.

  c. Open the Advanced Setup menu.

  d. Open the Fax Speed menu.

  e. Select the correct setting.
- Turn off the Error Correction option.

  a. Touch the Setup button.

  b. Open the Service menu.

  c. Open the Fax Service menu.

  d. Open the Error Correction menu.

  e. Touch the Off setting.

NOTE: Turning off the Error Correction option can reduce image quality.

- If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

No dial tone.

- Make sure that the telephone cord is plugged into the correct port on the product.
- Make sure that the telephone cord from the product is plugged directly into the wall telephone jack.
- Check for a dial tone on the phone line by using the Start Fax button.
- Unplug the product telephone cord from the wall, connect a telephone, and try making a voice call.

- Unplug the telephone cord from both the product and the wall and replug the cord.
- Make sure that you are using the telephone cord that came with the product.
- Connect the product phone cord into a jack for another phone line.
- Check the phone line by using the Run Fax Test option from the Service menu on the control panel.
  a. Touch the Setup button.
  b. Open the Service menu.
  c. Open the Fax Service menu.
  d. Select the Run Fax Test item.

The Fax is busy. message displays

- Try sending the fax again.
- Call the recipient to ensure that the fax machine is on and ready.
- Check that you are dialing the correct fax number.
- Check for a dial tone on the phone line by using the Start Fax button.
- Make sure that the phone is working by disconnecting the product, plugging in a telephone to the phone line, and making a voice call.
- Connect the product phone cord into a jack for another phone line, and try sending the fax again.
- Try a different phone cord.
- Send the fax at a later time.
- If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

The No fax answer. message displays

- Try to resend the fax.
- Call the recipient to ensure that the fax machine is on and ready.
- Check that you are dialing the correct fax number.
- Unplug the product telephone cord from the wall, connect a telephone, and try making a voice call.
- Connect the product phone cord into a jack for another phone line.
- Try a different phone cord.
- Make sure that the phone cord from the wall telephone jack is plugged into the line port.

- Check the phone line by using the Run Fax Test option from the Service menu on the control panel.
  a. Touch the Setup button.
  b. Open the Service menu.
  c. Open the Fax Service menu.
  d. Select the Run Fax Test item.
- If the error persists, contact HP. See www.hp.com/support/ljm425series or the support flyer that came in the product box.

Document feeder paper jam

- Verify that the paper meets product size requirements. The product does not support pages longer than 381 mm (15 in) for faxing.
- Copy or print the original to letter, A4, or legal size paper, and then resend the fax.

The Fax storage is full. message displays

- Turn the product off then on.
- Print stored faxes that have not been printed.
  a. Touch the Fax button, and then open the Fax Menu menu.
  b. Open the Receive Options menu.
  c. Select the Print Private Faxes item.
  d. Provide the password when the product prompts you.
- Delete stored faxes from memory.
  a. Touch the Setup button.
  b. Open the Service menu.
  c. Open the Fax Service menu.
  d. Select the Clear Saved Faxes item.
- Divide the large fax job into smaller sections, and then fax them individually.

Scanner error

- Verify that the paper meets product size requirements. The product does not support pages longer than 381 mm (15 in) for faxing.
- Copy or print the original onto letter, A4, or legal size paper and then resend the fax.

The control panel displays a Ready message with no attempt to send the fax

- Check the fax activity log for errors.
  - **a.** Touch the Fax button, and then open the Fax Menu item.
  - **b.** Open the Fax Reports menu.
  - **c.** Open the Fax Activity Log menu.
  - **d.** Select the Print Log Now option.
- If a phone is connected to the product, make sure that the phone is hung up.
- Disconnect all other lines between the fax and the product.
- Connect the product directly into the wall telephone jack and resend the fax.

The control panel displays the message "Storing page 1" and does not progress beyond that message

- Delete stored faxes from memory.
  - **a.** Touch the Setup button.
  - **b.** Open the Service menu.
  - **c.** Open the Fax Service menu.
  - **d.** Select the Clear Saved Faxes item.

Faxes can be received, but not sent

Send fax and nothing happens.

1. Check for a dial tone on the phone line by using the Start Fax button.
2. Turn the product off then on.
3. Use the control panel or the HP Fax Setup Wizard to configure the fax time, date, and fax header information.
   - **a.** Touch the Setup button.
   - **b.** Open the Fax Setup menu.
   - **c.** Open the Basic Setup menu.
   - **d.** Open the Fax Header menu.
   - **e.** Enter the correct settings.
4. Verify that any extension phones on the line are hung up.
5. If using a DSL service, make sure that the phone line connection to the product includes a high-pass filter.

Unable to use fax functions from the control panel

- The product might be password protected. Use the HP Embedded Web Server, HP Toolbox software, or the control panel to set a password.
- If you do not know the password for the product, contact your system administrator.
- Verify with the system administrator that the fax functionality has not been disabled.

Unable to use speed dials

- Make sure that the fax number is valid.
- If an outside line requires a prefix, turn on the Dial Prefix option or include the prefix in the speed dial number.
  - **a.** Touch the Setup button.
  - **b.** Open the Fax Setup menu.
  - **c.** Open the Basic Setup menu.
  - **d.** Open the Dial Prefix menu.
  - **e.** Select the On setting.

Unable to use group dials

- Make sure that the fax number is valid.
- If an outside line requires a prefix, turn on the Dial Prefix option or include the prefix in the speed dial number.
  - **a.** Touch the Setup button.
  - **b.** Open the Fax Setup menu.
  - **c.** Open the Basic Setup menu.
  - **d.** Open the Dial Prefix menu.
  - **e.** Select the On setting.
- Set up all entries in the group with speed dial entries.
  - **a.** Open an unused speed dial entry.
  - **b.** Enter the fax number for the speed dial.
  - **c.** Touch the OK button to save the speed dial.

Receive a recorded error message from the phone company when trying to send a fax

- Make sure you dial the fax number correctly, and make sure that the phone service is not blocked. For example, some phone services might prevent long distance calling.
- If an outside line requires a prefix, turn on the Dial Prefix option or include the prefix in the speed dial number.
  1. **a.** Touch the Setup button.
  2. **b.** Open the Fax Setup menu.
  3. **c.** Open the Basic Setup menu.
  4. **d.** Open the Dial Prefix menu.
  5. **e.** Select the On setting.

  NOTE: To send a fax without a prefix, when the Dial Prefix option is turned on, send the fax manually.
- Send a fax to an international number
  1. **a.** If a prefix is required, manually dial the telephone number with the prefix.
  2. **b.** Enter the country/region code before dialing the phone number.
  3. **c.** Wait for pauses as you hear the tones on the phone.
  4. **d.** Send the fax manually from the control panel.

Unable to send a fax when a phone is connected to the product

- Make sure that the telephone is hung up.
- Make sure that the telephone is not being used for a voice call when faxing.
- Unplug the phone from the line, and then try sending the fax.

Solve fax performance problems

- Faxes are sending slowly
- Fax quality is poor

Faxes are sending slowly

The product is experiencing poor phone line quality.

- Retry sending the fax when the line conditions have improved.
- Check with the phone service provider that the line supports fax.
- Turn off the Error Correction setting.
  1. Open the Setup Menu menu.
  2. Open the Service menu.
  3. Open the Fax Service menu.
  4. Open the Error Correction menu.
  5. Select the Off setting.

  NOTE: This can reduce image quality.
- Use white paper for the original. Do not use colors such as gray, yellow, or pink.
- Increase the Fax Speed setting.
  1. Open the Setup Menu menu.
  2. Open the Fax Setup menu.
  3. Open the Advanced Setup menu.
  4. Open the Fax Speed menu.
  5. Select the correct setting.
- Divide large fax jobs into smaller sections, and then fax them individually.
- Change the fax settings on the control panel to a lower resolution.
  1. Open the Setup Menu menu.
  2. Open the Fax Setup menu.
  3. Open the Advanced Setup menu.
  4. Open the Fax Resolution menu.
  5. Select the correct setting.

Fax quality is poor

If the fax is blurry or light, try the following steps to correct the problem.

- Increase fax resolution when sending faxes. Resolution does not affect received faxes.
  a. Open the Setup Menu menu.
  b. Open the Fax Setup menu.
  c. Open the Advanced Setup menu.
  d. Open the Fax Resolution menu.
  e. Select the correct setting.

NOTE: Increasing resolution slows transmission speed.

- Turn on the Error Correction setting from the control panel.
  a. Open the Setup Menu menu.
  b. Open the Service menu.
  c. Open the Fax Service menu.
  d. Open the Error Correction menu.
  e. Select the On setting.
- Check the toner cartridge. Replace it if necessary.
- Ask the sender to darken the contrast setting on the sending fax machine, and then resend the fax.

Solve DSL problems

Cannot send or receive a fax on a PBX line

- If you are using a PBX phone line, contact your PBX administrator to configure an analog fax line for your product.

Manually update the firmware

1. From the Home screen on the product control panel, touch the Setup button.
2. Open the following menus:
   - Service
   - LaserJet Update
   - Check For Updates Now
3. Touch the Yes button to prompt the product to search for firmware updates. If the product detects an upgrade, it will begin the update process.

NOTE: The LaserJet Update menu also contains items that allow you to set up automatic firmware updates for the product, allow you to upload an earlier firmware version, and enable or disable a prompt prior to a firmware file upload.

A Service and support

- Hewlett-Packard limited warranty statement
- HP's Premium Protection Warranty: LaserJet toner cartridge limited warranty statement
- HP policy on non-HP supplies
- HP anticounterfeit Web site
- Data stored on the toner cartridge
- End User License Agreement
- OpenSSL
- Customer support
- Repack the product

Hewlett-Packard limited warranty statement

HP PRODUCT	DURATION OF LIMITED WARRANTY
HP LaserJet Pro 400 MFP M425dn, M425dw	One-year product exchange

HP warrants to you, the end-user customer, that HP hardware and accessories will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or equivalent in performance to new.

HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software which does not execute its programming instructions due to such defects.

HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.

HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.

Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.

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HP's Premium Protection Warranty: LaserJet toner cartridge limited warranty statement

This HP product is warranted to be free from defects in materials and workmanship.

This warranty does not apply to products that (a) have been refilled, refurbished, remanufactured or tampered with in any way, (b) experience problems resulting from misuse, improper storage, or operation outside of the published environmental specifications for the printer product or (c) exhibit wear from ordinary use.

To obtain warranty service, please return the product to place of purchase (with a written description of the problem and print samples) or contact HP customer support. At HP's option, HP will either replace products that prove to be defective or refund your purchase price.

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HP policy on non-HP supplies

Hewlett-Packard Company cannot recommend the use of non-HP toner cartridges, either new or remanufactured.

NOTE: For HP printer products, the use of a non-HP toner cartridge or a refilled toner cartridge does not affect either the warranty to the customer or any HP support contract with the customer. However, if product failure or damage is attributable to the use of a non-HP toner cartridge or refilled toner cartridge, HP will charge its standard time and materials charges to service the product for the particular failure or damage.

HP anticounterfeit Web site

Go to www.hp.com/go/anticounterfeit when you install an HP toner cartridge and the control-panel message says the cartridge is non-HP. HP will help determine if the cartridge is genuine and take steps to resolve the problem.

Your toner cartridge might not be a genuine HP toner cartridge if you notice the following:

- The supplies status page indicates that a non-HP supply is installed.
- You are experiencing a high number of problems with the cartridge.
- The cartridge does not look like it usually does (for example, the packaging differs from HP packaging).

Data stored on the toner cartridge

The HP toner cartridges used with this product contain a memory chip that assists in the operation of the product.

In addition, this memory chip collects a limited set of information about the usage of the product, which might include the following: the date when the toner cartridge was first installed, the date when the toner cartridge was last used, the number of pages printed using the toner cartridge, the page coverage, the printing modes used, any printing errors that might have occurred, and the product model. This information helps HP design future products to meet our customers' printing needs.

The data collected from the toner cartridge memory chip does not contain information that can be used to identify a customer or user of the toner cartridge or their product.

HP collects a sampling of the memory chips from toner cartridges returned to HP's free return and recycling program (HP Planet Partners: www.hp.com/recycle). The memory chips from this sampling are read and studied in order to improve future HP products. HP partners who assist in recycling this toner cartridge might have access to this data, as well.

Any third party possessing the toner cartridge might have access to the anonymous information on the memory chip.

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Rev. 04/09

OpenSSL

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)

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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Customer support

Get telephone support for your country/region Have the product name, serial number, date of purchase, and problem description ready.	Country/region phone numbers are on the flyer that was in the box with your product or at www.hp.com/support/.
Get 24-hour Internet support	www.hp.com/support/ljm425series
Download software utilities, drivers, and electronic information	www.hp.com/support/ljm425series
Order additional HP service or maintenance agreements	www.hp.com/go/carepack
Register your product	www.register.hp.com

Repack the product

If HP Customer Care determines that your product needs to be returned to HP for repair, follow these steps to repack the product before shipping it.

CAUTION: Shipping damage as a result of inadequate packing is the customer's responsibility.

1. Remove and retain the toner cartridge.

   CAUTION: It is *extremely important* to remove the toner cartridge before shipping the product. A toner cartridge that remains in the product during shipping can leak and cover the product engine and other parts with toner.

   To prevent damage to the toner cartridge, avoid touching the rollers on it, and store the toner cartridge so that it is not exposed to light.

2. Remove and retain the power cable, interface cable, and any optional accessories.
3. If possible, include print samples and 50 to 100 sheets of paper that did not print correctly.
4. In the U.S., call HP Customer Care to request new packing material. In other areas, use the original packing material, if possible.

B Product specifications

- Physical specifications
- Power consumption, electrical specifications, and acoustic emissions
- Environmental specifications

Physical specifications

Table B-1 Physical specifications

Product	Height	Depth	Width	Weight
HP LaserJet Pro 400 MFP M425 Series	422 mm (16.6 in)	374 mm (14.7 in)	420 mm (16.5 in)	15 kg (33.1 lb)

Power consumption, electrical specifications, and acoustic emissions

See www.hp.com/support/ljm425series for current information.

Environmental specifications

Table B-2 Operating-environment specifications

Environment	Recommended	Allowed
Temperature	17° to 25°C (62.6° to 77°F)	15° to 30°C (59° to 86°F)
Relative humidity	30% to 70% relative humidity (RH)	10% to 80% RH
Altitude	Not applicable	0 to 3048 m (0 to 10,000 ft)

C Regulatory information

- FCC regulations
- Environmental product stewardship program
- Declaration of conformity
- Declaration of conformity
- Safety statements
- Additional statements for telecom (fax) products
- Additional statements for wireless products

FCC regulations

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase separation between equipment and receiver.
- Connect equipment to an outlet on a circuit different from that to which the receiver is located.
- Consult your dealer or an experienced radio/TV technician.

NOTE: Any changes or modifications to the printer that are not expressly approved by HP could void the user's authority to operate this equipment.

Use of a shielded interface cable is required to comply with the Class B limits of Part 15 of FCC rules.

Environmental product stewardship program

Protecting the environment

Hewlett-Packard Company is committed to providing quality products in an environmentally sound manner. This product has been designed with several attributes to minimize impacts on our environment.

Ozone production

This product generates no appreciable ozone gas (O_3).

Power consumption

Power usage drops significantly while in Sleep mode, which saves natural resources and saves money without affecting the high performance of this product. Hewlett-Packard printing and imaging equipment marked with the ENERGY STAR® logo is qualified to the U.S. Environmental Protection Agency's ENERGY STAR specifications for imaging equipment. The following mark will appear on ENERGY STAR qualified imaging products:

Additional ENERGY STAR qualified imaging product model information is listed at:

www.hp.com/go/energystar

Toner consumption

EconoMode uses less toner, which might extend the life of the toner cartridge. HP does not recommend the full-time use of EconoMode. If EconoMode is used full-time, the toner supply might outlast the mechanical parts in the toner cartridge. If print quality begins to degrade and is no longer acceptable, consider replacing the toner cartridge.

Paper use

This product's manual/automatic duplex feature (two-sided printing) and N-up printing (multiple pages printed on one page) capability can reduce paper usage and the resulting demands on natural resources.

Plastics

Plastic parts over 25 grams are marked according to international standards that enhance the ability to identify plastics for recycling purposes at the end of the product's life.

HP LaserJet print supplies

It's easy to return and recycle your HP LaserJet toner cartridges after use—free of charge—with HP Planet Partners. Multilingual program information and instructions are included in every new HP LaserJet toner cartridge and supplies package. You help reduce the toll on the environment further when you return multiple cartridges together rather than separately.

HP is committed to providing inventive, high-quality products and services that are environmentally sound, from product design and manufacturing to distribution, customer use and recycling. When you participate in the HP Planet Partners program, we ensure your HP LaserJet toner cartridges are recycled properly, processing them to recover plastics and metals for new products and diverting millions of tons of waste from landfills. Since this cartridge is being recycled and used in new materials, it will not be returned to you. Thank you for being environmentally responsible!

NOTE: Use the return label to return original HP LaserJet toner cartridges only. Please do not use this label for HP inkjet cartridges, non-HP cartridges, refilled or remanufactured cartridges or warranty returns. For information about recycling your HP inkjet cartridges please go to http://www.hp.com/recycle.

Return and recycling instructions

United States and Puerto Rico

The enclosed label in the HP LaserJet toner cartridge box is for the return and recycling of one or more HP LaserJet toner cartridges after use. Please follow the applicable instructions below.

Multiple returns (more than one cartridge)

1. Package each HP LaserJet toner cartridge in its original box and bag.
2. Tape the boxes together using strapping or packaging tape. The package can weigh up to 31 kg (70 lb).
3. Use a single pre-paid shipping label.

OR

1. Use your own suitable box, or request a free bulk collection box from www.hp.com/recycle or 1-800-340-2445 (holds up to 31 kg (70 lb) of HP LaserJet toner cartridges).
2. Use a single pre-paid shipping label.

Single returns

1. Package the HP LaserJet toner cartridge in its original bag and box.
2. Place the shipping label on the front of the box.

Shipping

For US and Puerto Rico HP LaserJet toner cartridge recycling returns, use the pre-paid, pre-addressed shipping label contained in the box. To use the UPS label, give the package to the UPS driver during

your next delivery or pick-up, or take it to an authorized UPS drop-off center. (Requested UPS Ground pickup will be charged normal pick-up rates) For the location of your local UPS drop-off center, call 1-800-PICKUPS or visit www.ups.com.

If you are returning the package with the FedEx label, give the package to either the U.S. Postal Service carrier or FedEx driver during your next pick-up or delivery. (Requested FedEx Ground pickup will be charged normal pick-up rates). Or, you can drop off your packaged toner cartridge(s) at any U.S. Post Office or any FedEx shipping center or store. For the location of your nearest U.S. Post Office, please call 1-800-ASK-USPS or visit www.usps.com. For the location of your nearest FedEx shipping center/ store, please call 1-800-GOFEDEX or visit www.fedex.com.

For more information, or to order additional labels or boxes for bulk returns, visit www.hp.com/recycle or call 1-800-340-2445. Information subject to change without notice.

Residents of Alaska and Hawaii

Do not use the UPS label. Call 1-800-340-2445 for information and instructions. The U.S. Postal Service provides no-cost cartridge return transportation services under an arrangement with HP for Alaska and Hawaii.

Non-U.S. returns

To participate in HP Planet Partners return and recycling program, just follow the simple directions in the recycling guide (found inside the packaging of your new product supply item) or visit www.hp.com/recycle. Select your country/region for information on how to return your HP LaserJet printing supplies.

Paper

This product is capable of using recycled papers when the paper meets the guidelines outlined in the *HP LaserJet Printer Family Print Media Guide*. This product is suitable for the use of recycled paper according to EN12281:2002.

Material restrictions

This HP product does not contain added mercury.

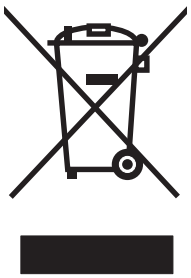
This HP product contains a battery that might require special handling at end-of-life. The batteries contained in or supplied by Hewlett-Packard for this product include the following:

HP LaserJet Pro 400 MFP M425 Series	
Type	Carbon Monofluoride Lithium
Weight	0.8 g
Location	On formatter board
User-removable	No

廢電池請回收

For recycling information, you can go to www.hp.com/recycle, or contact your local authorities or the Electronics Industries Alliance: www.eiae.org.

Disposal of waste equipment by users



This symbol means do not dispose of your product with your other household waste. Instead, you should protect human health and the environment by handing over your waste equipment to a designated collection point for the recycling of waste electrical and electronic equipment. For more information, please contact your household waste disposal service, or go to: www.hp.com/recycle.

Electronic hardware recycling

HP encourages customers to recycle used electronic hardware. For more information about recycling programs go to: www.hp.com/recycle.

Chemical substances

HP is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at: www.hp.com/go/reach.

Material Safety Data Sheet (MSDS)

Material Safety Data Sheets (MSDS) for supplies containing chemical substances (for example, toner) can be obtained by accessing the HP Web site at www.hp.com/go/msds or www.hp.com/hpinfo/community/environment/productinfo/safety.

For more information

To obtain information about these environmental topics:

- Product environmental profile sheet for this and many related HP products
- HP's commitment to the environment

- HP's environmental management system
- HP's end-of-life product return and recycling program
- Material Safety Data Sheets

Visit www.hp.com/go/environment or www.hp.com/hpinfo/globalcitizenship/environment.

Declaration of conformity

Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name:	Hewlett-Packard Information Technology R&D (Shanghai) Co., Ltd.	DoC#: SHNGC-1101-00-rel.1.0
Manufacturer's Address:	Building 6, No. 690 BiBo Road	
	ZhangJiang, Shanghai, China	

declares, that the product

Product Name:	HP LaserJet Pro 400 MFP M425dn
Regulatory Model Numbers:[2)]	SHNGC-1101-00
	BOISB-1102-00 – (US-Fax Module LIU)
	BOISB-1102-01 – (EURO-Fax Module LIU)
Product Options:	All
Print Cartridges:	CF280A

conforms to the following Product Specifications:

SAFETY:	IEC 60950-1:2005 / EN60950-1: 2006 +A11 +A1
	IEC 60825-1:2007 / EN 60825-1:2007 (Class 1 Laser/LED Product)
	IEC 62479:2010 / EN 62479:2010
	GB4943-2001
EMC:	CISPR22:2005 +A1/ EN55022:2006 +A1 - Class B[1)]
	EN 61000-3-2:2006 +A1 +A2
	EN 61000-3-3:2008
	EN 55024:1998 +A1 +A2
	FCC Title 47 CFR, Part 15 Class B / ICES-003, Issue 4
	GB9254-2008, GB17625.1-2003
TELECOM:	ES 203 021; FCC Title 47 CFR, Part 68[3)]
ENERGY USE:	Regulation (EC) No. 1275/2008:
	ENERGY STAR® Qualified Imaging Equipment Typical Electricity Consumption (TEC) Test Procedure

Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC, the R&TTE Directive 1999/5/EC (Annex II), the EuP Directive 2005/32/EC and carries the CE-Marking CE accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2. For regulatory purposes, these products are assigned a Regulatory model number. This number should not be confused with the product name or the product number(s).
3. Telecom approvals and standards appropriate for the target countries/regions have been applied to this product, in addition to those listed above.
4. This product uses an analog fax accessory module which Regulatory Model numbers are: BOISB-1102-00 (US-LIU) or BOISB-1102-01 (EURO LIU), as needed to meet technical regulatory requirements for the countries/regions this product will be sold.

Shanghai, China

May 11, 2011

For Regulatory Topics only, contact:

European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe, Herrenberger Straße 140, D-71034, Böblingen (Fax: +49-7031-14-3143) www.hp.eu/certificates
USA Contact:	Product Regulations Manager, Hewlett-Packard Company, PO Box 15, Mail Stop 160, Boise, Idaho 83707-0015 (Phone: 208-396-6000)

Declaration of conformity

Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name:	Hewlett-Packard Information Technology R&D (Shanghai) Co., Ltd.	DoC#: SHNGC-1101-01-rel.1.0
Manufacturer's Address:	Building 6, No. 690 BiBo Road	
	ZhangJiang, Shanghai, China	
declares, that the product		
Product Name:	HP LaserJet Pro 400 MFP M425dw	
Regulatory Model:[2)]	SHNGC-1101-01	
	BOISB-1102-00 – (US-Fax Module LIU)	
	BOISB-1102-01 – (EURO-Fax Module LIU)	
	SDGOB – 0892 – (Radio Module)	
Product Options:	All	
Print Cartridges:	CF280A	
conforms to the following Product Specifications:		
SAFETY:	IEC 60950-1:2005 / EN60950-1: 2006 +A11 +A1	
	IEC 60825-1:2007 / EN 60825-1:2007 (Class 1 Laser/LED Product)	
	IEC 62479:2010/EN 62479:2010	
	GB4943-2001	
EMC:	CISPR22:2005 +A1/ EN55022:2006 +A1 - Class B[1)]	
	EN 61000-3-2:2006 +A1 +A2	
	EN 61000-3-3:2008	
	EN 55024:1998 +A1 +A2	
	FCC Title 47 CFR, Part 15 Class B / ICES-003, Issue 4	
	GB9254-2008, GB17625.1-2003	
TELECOM	ES 203 021; FCC Title 47 CFR, Part 68[3)]	
Radio:[5)]	IEC 62311: 2007/ EN62311: 2008	
	EN 301 489-1:V1.8.1 / EN 301 489-17:V2.1.1	
	EN 300 328: V1.7.1	
	FCC Title 47 CFR, Part 15 Subpart C (Section 15.247) / IC: RSS-210	
ENERGY USE:	Regulation (EC) No. 1275/2008:	
	ENERGY STAR® Qualified Imaging Equipment Typical Electricity Consumption (TEC) Test Procedure	

Supplementary Information:

The product herewith complies with the requirements of the R&TTE Directive 1999/5/EC Annex II and Annex IV, EMC Directive 2004/108/EC, the Low Voltage Directive 2006/95/EC and the EuP Directive 2005/32/EC, and carries the CE-Marking accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2. For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the product name or the product number(s).
3. Telecom approvals and standards appropriate for the target countries/regions have been applied to this product, in addition to those listed above.
4. This product uses an analog fax accessory module which Regulatory Model numbers are: BOISB-1102-00 (US-LIU) or BOISB-1102-01 (EURO LIU), as needed to meet technical regulatory requirements for the countries/regions this product will be sold.
5. This product uses a radio module device which Regulatory Model number is SDGOB-0892 as needed to meet technical regulatory requirements for the countries/regions this product will be sold.

Shanghai, China

May 11, 2011

For Regulatory Topics only, contact:

European Contact:	Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe, Herrenberger Straße 140, D-71034, Böblingen (FAX: +49-7031-14-3143) www.hp.eu/certificates
USA Contact:	Product Regulations Manager, Hewlett-Packard Company, PO Box 15, Mail Stop 160, Boise, Idaho 83707-0015 (Phone: 208-396-6000)

Safety statements

Laser safety

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. The device is certified as a “Class 1” laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside the device is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

⚠ **WARNING!** Using controls, making adjustments, or performing procedures other than those specified in this user guide may result in exposure to hazardous radiation.

Canadian DOC regulations

Complies with Canadian EMC Class B requirements.

« Conforme à la classe B des normes canadiennes de compatibilité électromagnétiques. « CEM ». »

VCCI statement (Japan)

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

Power cord instructions

Make sure your power source is adequate for the product voltage rating. The voltage rating is on the product label. The product uses either 110-127 Vac or 220-240 Vac and 50/60 Hz.

Connect the power cord between the product and a grounded AC outlet.

⚠ **CAUTION:** To prevent damage to the product, use only the power cord that is provided with the product.

Power cord statement (Japan)

製品には、同梱された電源コードをお使い下さい。
同梱された電源コードは、他の製品では使用出来ません。

EMC statement (Korea)

B급 기기 (가정용 방송통신기기)	이 기기는 가정용(B급)으로 전자파적합등록을 한 기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

Laser statement for Finland

Luokan 1 laserlaite

Klass 1 Laser Apparat

HP LaserJet Pro 400 MFP M425dn, M425dw, laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (2007) mukaisesti.

VAROITUS !

Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING !

Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

HUOLTO

HP LaserJet Pro 400 MFP M425dn, M425dw - kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

VARO !

Mikäli kirjoittimen suojakotelo avataan, olet alttiina näkymättömällelasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

VARNING !

Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen.

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista: Aallonpituus 775-795 nm Teho 5 m W Luokan 3B laser.

GS statement (Germany)

Das Gerät ist nicht für die Benutzung im unmittelbaren Gesichtsfeld am Bildschirmarbeitsplatz vorgesehen. Um störende Reflexionen am Bildschirmarbeitsplatz zu vermeiden, darf dieses Produkt nicht im unmittelbaren Gesichtsfeld platziert warden.

Das Gerät ist kein Bildschirmarbeitsplatz gemäß BildscharbV. Bei ungünstigen Lichtverhältnissen (z. B. direkte Sonneneinstrahlung) kann es zu Reflexionen auf dem Display und damit zu Einschränkungen der Lesbarkeit der dargestellten Zeichen kommen.

Substances Table (China)

有毒有害物质表

根据中国电子信息产品污染控制管理办法的要求而出台

部件名称	有毒有害物质和元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
打印引擎	X	0	0	0	0	0
复印机组件	X	0	0	0	0	0
控制面板	0	0	0	0	0	0
塑料外壳	0	0	0	0	0	0
格式化板组件	X	0	0	0	0	0
碳粉盒	X	0	0	0	0	0

0614

0：表示在此部件所用的所有同类材料中，所含的此有毒或有害物质均低于 SJ/T11363-2006 的限制要求。
X：表示在此部件所用的所有同类材料中，至少一种所含的此有毒或有害物质高于 SJ/T11363-2006 的限制要求。

注：引用的“环保使用期限”是根据在正常温度和湿度条件下操作使用产品而确定的。

Restriction on Hazardous Substances statement (Turkey)

Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur

Restriction on Hazardous Substances statement (Ukraine)

Обладнання відповідає вимогам Технічного регламенту щодо обмеження використання деяких небезпечних речовин в електричному та електронному обладнанні, затвердженого постановою Кабінету Міністрів України від 3 грудня 2008 № 1057

Additional statements for telecom (fax) products

EU Statement for Telecom Operation

This product is intended to be connected to the analog Public Switched Telecommunication Networks (PSTN) of European Economic Area (EEA) countries/regions.

It meets requirements of EU R&TTE Directive 1999/5/EC (Annex II) and carries appropriate CE conformity marking.

For more details see Declaration of Conformity issued by the manufacturer in another section of this manual.

However due to differences between individual national PSTNs the product may not guarantee unconditional assurance of successful operation on every PSTN termination point. Network compatibility depends on the correct setting being selected by the customer in preparation of its connection to the PSTN. Please follow the instructions provided in the user manual.

If you experience network compatibility issues, please contact your equipment supplier or Hewlett-Packard help desk in the country/region of operation.

Connecting to a PSTN termination point may be the subject of additional requirements set out by the local PSTN operator.

New Zealand Telecom Statements

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

This equipment may not provide for the effective hand-over of a call to another device connected to the same line.

This equipment shall not be set up to make automatic calls to the Telecom "111" Emergency Service.

This product has not been tested to ensure compatibility with the FaxAbility distinctive ring service for New Zealand.

Additional FCC statement for telecom products (US)

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the back of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

The REN is used to determine the quantity of devices, which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all, areas, the sum of the RENs should not exceed five (5.0). To be certain of the

number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

This equipment uses the following USOC jacks: RJ11C.

An FCC-compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack, which is Part 68 compliant. This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please see the numbers in this manual for repair and (or) warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

The customer can do the following repairs: Replace any original equipment that came with the device. This includes the toner cartridge, the supports for trays and bins, the power cord, and the telephone cord. It is recommended that the customer install an AC surge arrestor in the AC outlet to which this device is connected. This is to avoid damage to the equipment caused by local lightning strikes and other electrical surges.

Telephone Consumer Protection Act (US)

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including fax machines, to send any message unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message and the telephone number of the sending machine or such business, or other entity, or individual. (The telephone number provided cannot be a 900 number or any other number for which charges exceed local or long distance transmission charges).

Industry Canada CS-03 requirements

Notice: The Industry Canada label identifies certified equipment. This certification means the equipment meets certain telecommunications network protective, operational, and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirement document(s). The Department does not guarantee the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible for the equipment to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company

cause to request the user to disconnect the equipment. Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution can be particularly important in rural areas.

⚠ **CAUTION:** Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate. The Ringer Equivalence Number (REN) of this device is 0.0B.

This product meets the applicable Industry Canada technical specifications. / Le présent matériel est conforme aux specifications techniques applicables d'Industrie Canada.

Notice: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Number of all the devices does not exceed five (5.0). / L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas cinq.

The standard connecting arrangement code (telephone jack type) for equipment with direct connections to the telephone network is CA11A.

Vietnam Telecom wired/wireless marking for ICTQC Type approved products

Additional statements for wireless products

FCC compliance statement—United States

Exposure to radio frequency radiation

⚠ **CAUTION:** The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device shall be used in such a manner that the potential for human contact during normal operation is minimized.

In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 in) during normal operation.

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

⚠ **CAUTION:** Based on Section 15.21 of the FCC rules, changes of modifications to the operation of this product without the express approval by Hewlett-Packard Company may invalidate its authorized use.

Australia statement

This device incorporates a radio-transmitting (wireless) device. For protection against radio transmission exposure, it is recommended that this device be operated no less than 20 cm from the head, neck, or body.

Brazil ANATEL statement

Este equipamento opera em caráter secundário, isto é, não tem direito à proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

Canadian statements

For Indoor Use. This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications. The internal wireless radio complies with RSS 210 of Industry Canada.

Pour l´usage d´intérieur. Le présent appareil numérique n´émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescribes dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada. Le composant RF interne est conforme à la norme CNR-210 d´Industrie Canada.

European Union regulatory notice

The telecommunications functionality of this product may be used in the following EU and EFTA countries/regions:

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and United Kingdom.

Notice for use in France

For 2.4 GHz Wireless LAN operation of this product certain restrictions apply: This equipment may be used indoor for the entire 2400-2483.5 MHz frequency band (channels 1-13). For outdoor use, only 2400-2454 MHz frequency band (channels 1-9) may be used. For the latest requirements, see www.arcep.fr.

L'utilisation de cet equipement (2.4 GHz Wireless LAN) est soumise à certaines restrictions : Cet équipement peut être utilisé à l'intérieur d'un bâtiment en utilisant toutes les fréquences de 2400-2483.5 MHz (Chaine 1-13). Pour une utilisation en environnement extérieur, vous devez utiliser les fréquences comprises entre 2400-2454 MHz (Chaine 1-9). Pour les dernières restrictions, voir, www.arcep.fr.

Notice for use in Russia

Существуют определенные ограничения по использованию беспроводных сетей (стандарта 802.11 b/g) с рабочей частотой 2,4 ГГц: Данное оборудование может использоваться внутри помещений с использованием диапазона частот 2400-2483,5 МГц (каналы 1-13). При использовании внутри помещений максимальная эффективная изотропно–излучаемая мощность (ЭИИМ) должна составлять не более 100мВт.

Mexico statement

Aviso para los usuarios de México

"La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada."

Korean statement

당해 무선설비는 운용 중 전파혼선 가능성이 있음

Taiwan statement

低功率電波輻射性電機管理辦法

第十二條　經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條　低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
前項合法通信，指依電信法規定作業之無線電通信。
低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Vietnam Telecom wired/wireless marking for ICTQC Type approved products

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